

DEP



CITIZENS' BULLETIN

"...Connecticut has embarked on an ambitious program of environmental protection, and I am pleased to report that we are making steady progress toward achieving clean air and clean water, restoring our once plentiful fisheries resources, and protecting our wildlife..."

"...But the 137 new laws which the Connecticut legislature has given us in the last two years -- the combined 500 pages of new federal and state law that we administer -- do not provide the whole answer to our land use problems.

- They will not halt, for example, inefficient suburban sprawl -- the kind that makes the development of energy-efficient, clean mass transit so difficult.
- They will not guarantee the preservation of adequate open space to serve our future recreational and aesthetic needs.
- They will not preserve a vital and viable agricultural community in Connecticut.

In short, they will not insure "quality of life" in the larger sense that we seek.

"...Environmental risks go up proportionately as development pressures build, particularly as increasingly marginal land is put on the development block. Homes and shopping centers are often constructed where the host environment is unreceptive. Conditions of steep slopes, tight soils, high groundwater and shallow bedrock are too often ignored. As a consequence, the risk of pollution -- and of major capital investment to correct it -- goes up precipitously.

"...Simply stated, our development patterns must arise from the assimilative capacities of the land.

"...That development will occur is certain. We want to be sure that it takes place in the right place at the right time and with the recognition that the wrong kind of development in the wrong place is not only an environmental catastrophe but a pocketbook disaster for the taxpayer. We need to recognize the limits of the land, plan, and then develop according to those limits, and in doing so, provide for the economic and social well-being of our people."

- Commissioner Douglas M. Costle
excerpts from 1974 speeches

CONNECTICUT 1974.

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state land planning - a history

Today's interest in the vital issue of land use is not a sudden phenomenon - its roots extend far into the past and were well fertilized by various studies, inventories and plans along the way. Nor do we today need to reinvent the wheel. While concepts such as transfer of development rights may be new, actions to shape the use of land intelligently are not - for instance, attempts to preserve agricultural lands in Connecticut began in the early sixties and concern over land speculation goes back to the early seventeenth hundreds.

The following is excerpted and edited from a history of statewide land planning prepared by William Cox of the Planning and Budgeting Division, Department of Finance and Control (the agency which prepared the Plan of Conservation and Development).

Most major land use decisions in Connecticut are made on the local level. The location of schools, churches, graveyards, and major activities such as slaughterhouses has been guided formally, through zoning, and informally as well, by many Connecticut towns and cities since the earliest settlements were founded.



As the pace of development increased, more formal and wide-ranging controls became accepted. In 1917, Hartford became the first city in the nation to complete a plan of development. Beginning in the 1920's, many of Connecticut's more urban towns and cities adopted planning and zoning controls to provide for suitable growth at appropriate rates. Today, all of the state's 169 towns have planning and/or zoning agencies. The extent of these controls and the degree to which they are utilized varies greatly. In many instances, zoning was adopted without adequately planning for future town needs. The resulting regulation of land use often became a patchquilt of incompatible or inappropriate decisions by the zoning boards. Even where planning boards exist, numerous towns have suddenly been hit with the consequences of haphazard or too rapid growth. The prices paid have often included soaring taxes, loss of potential recreation sites and overcrowded streets. Far more tragic has been the cost in human life and property where houses, shops and factories were built in highly flood-prone areas.

State government became involved in land use and development in response to major disasters such as floods and hurricanes and in areas where problems have outgrown any single local government's ability to respond. Probably the earliest and most significant area of state involvement was highways and roads. As more and more people were freed by the automobile to travel beyond their town borders, the need for a statewide highway building and maintenance program became clear.

In recent years, concern for environmental quality has led the state to once again assert its powers to deal with development problems. While municipalities retain environmental controls such as planning, zoning, sanitary regulations and historic districts, Connecticut has developed strong state level planning and regulatory programs in such areas as air and water pollution, public health, flood control, and housing construction standards. Each of these programs was started in response to a particular set of problems without being tied into any overall system of environmental planning and protection. As new planning and regulatory elements were added, the environmental implications of statewide land development patterns were largely ignored except where individual programs were affected.

Yet the need for some kind of statewide planning for environmental protection and development has been documented by state research and planning dating back to the 1930's.

CONNECTICUT STATE PLANNING BOARD

In 1933 Governor Wilbur L. Cross appointed a Planning Board, which two years later was officially established by the General Assembly as the State Planning Board, to "collect information" and "formulate plans for advancing the wise use of the resources of the state..." Connecticut was one of the earliest states to establish a planning board, largely in response to federal planning efforts instituted by the National Industrial Recovery Act of 1933. The activities of the state Board were limited at first because of its small budget, but a staff was hired with assistance from the National Resources Committee and the federal Works Progress Administration. Because little physical, social or economic information existed on a statewide basis outside of U.S. Census publications, the collection of basic data, such as the decline of the textile industry in Eastern Connecticut and small manufacturing plants throughout the state, became the Board's primary responsibility. Other activities included investigating the damage and causes of the severe 1936 floods, coordinating the resurveying of the disputed boundary with Rhode Island, and a historical research project which lead to The Connecticut Guide, a historical and scientific primer on Connecticut's towns.

The Connecticut State Planning Board was abolished in 1937, after only four years of activity, a victim, like most of the other state planning boards, of federal financial cutbacks during the late thirties and early war years.

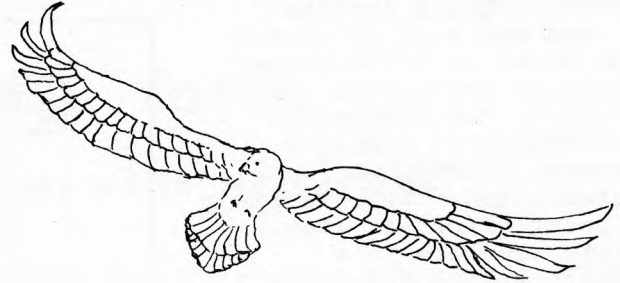
POST-WAR PLANNING BOARD

Interest in statewide planning in Connecticut reappeared with the creation of the Post-War Planning Board. The Board was established for a two year period with the specific purpose of formulating plans for the readjustment and reconversion of the state's economy from a wartime to a peacetime basis.

The Board's report to Governor Raymond E. Baldwin (titled Post-War Connecticut) contained major recommendations in the areas of business, government operations and services, and community development. Some of the major recommendations included:

coordination of public works programs to achieve harmonious and efficient development; inauguration of a local planning assistance and community development program; formulation of a statewide land-use and development program; and the creation of a state information clearing-house.

The magnitude of work remaining



prompted the recommendation for an agency of state government "to continue and extend the work begun by the Post-War Planning Board....with authority for planning and research activities of the state other than the regular statutory and departmental planning and duties, and for coordination of its works with all public and private agencies."

Although some of the other recommendations found support, the 1945 General Assembly did not show much interest in a state information and planning agency. The Connecticut Development Commission (CDC), established in 1939, was considered to be a sufficient substitute for a state information and development planning activity center. Ten years later, the CDC finally was given authority to support planning activities of regional and statewide significance.

BEGINNING OF REGIONAL PLANNING

Interest in regional planning later prompted the 1949 General Assembly to allow two or more contiguous municipalities with planning commissions to form regional planning authorities (later changed to regional planning agencies). As a result, the Regional Planning Authority of South Central Connecticut was formed.

At the national level, the Housing Act of 1954 for the first time authorized federal aid for metropolitan and regional planning. This program was used to help pay for regional plans in areas of Connecticut badly damaged by the 1955 flood. Prompted by public support for regional flood prevention and economic recovery plans, and new federal standards for aid to regional planning authorities, the 1955 General Assembly authorized the creation

of a regional planning system.

Regional Planning Authority boundaries were to be set by the CDC and in 1957, the General Assembly began a program of financial assistance for regional planning.

CONNECTICUT INTERREGIONAL PLANNING PROGRAM

As regional planning agencies began forming, a need was seen to expand the scope of research and planning activities. Thus, in 1960, the Connecticut Interregional Planning Program (CIPP) was established. This became a joint effort of four state agencies in a comprehensive statewide land use, natural resources and transportation study. The Highway Department, CDC, Department of Agriculture and Natural Resources, and finally, the Department of Finance and Control joined the program.

The member agencies of CIPP believed that providing a common, diversified base of information would be the best approach for the state to support regional planning in its infancy. The many study reports which resulted were summarized in the volume, Connecticut Takes Stock for Action published in 1964.

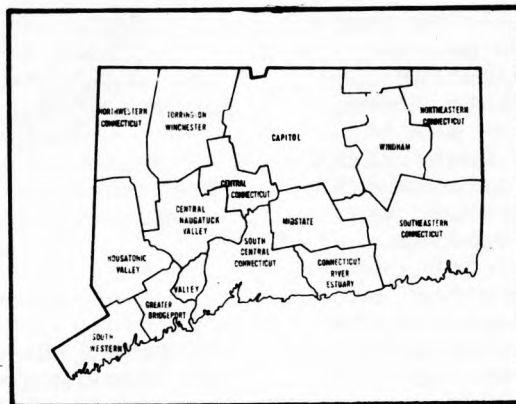
From the inventory phase, CIPP began studying future state needs in transportation, open space, jobs, housing and public facilities. Staff members also began investigating the shape and quality of statewide urban growth and development for the many implications to be seen in these other areas. The results of this major project (completed in 1967) were released in the series Connecticut: Choices for Action.

STATE PLANNING COUNCIL

In 1967, the State Planning Council was created to promote closer ties and cooperative planning efforts by the departments of state government. Twelve major departments or agencies are included as members, The Governor, or a representative (which has to date always been the Commissioner of Finance and Control) serves as chairperson.

In the 1967 act, the Department of Finance and Control was made secretariat to the Council with a planning director

to handle Council business. A Regional Planning Agency Council, composed of the chairman of regional planning agencies, was created as an advisory body for the State Planning Council. Two years later the General Assembly created, within Finance and Control, the Office of State Planning (OSP). OSP was made secretariat to the State Planning Council, and assumed regional and statewide planning responsibilities from the CDC.



Planning Regions
From the Plan of C and D

The expansion of CIPP into a broad-based government planning council has been part of a general trend to make state government more effective. Since the State Planning Council was formed, the General Assembly created two new departments with major impact on conservation and development in Connecticut. Both combine activities previously administered by numerous separate agencies, boards and commissions.

DOT/DEP

The first of these, the Department of Transportation, was formed in 1969 by the combination of separate agencies and authorities for highways, aeronautics, ports, buses and railroads. For the first time, Connecticut's transportation needs could be evaluated as a complex system by a unified department.

As a result of strong new public support for protecting Connecticut's environment, the General Assembly in 1959 created the Department of Agriculture and Natural Resources, to consolidate virtually all the natural resource agencies into one. This consolidation was completed in 1971 with the formation of the Department of Environmental Protection (DEP). DEP has authority to act against virtually all forms of air, water and land pollution. In addition, DEP is responsible for the management of state owned or regulated conservation and recreation areas.

In order to more fully tie state planning responsibilities to the budgetary process, the General Assembly in 1973 created the Planning and Budgeting Division. This action combined the Office of State Planning, the Office of Federal/State Relations, and the Budget Division into a single organization within the Department of Finance and Control. This agency has planning, management and budget-making responsibilities, and produced the Plan of

Conservation and Development discussed in the previous issue.

Connecticut can be proud of its early recognition of the importance of land use. Action on a unified basis will surely come in the future, and new structures to deal with comprehensive land use planning will be needed. The shape of these structures is up to the citizens of the state.

For further information...

- The plans cited in the article are all available for review in the State Library in Hartford.
- The Plan of Conservation and Development, from the Planning and Budgeting Division, Department of Finance and Control, 340 Capitol Avenue, Hartford, Ct 06115

agricultural task force

recommendations for statewide program

The Governor's Task Force for the Preservation of Agricultural Lands has formulated preliminary recommendations which will be the basis of the final report to be forwarded to the Governor in late December.

The following resolutions were adopted by the Task Force:

-That the state preserve a minimum of 325,000 acres (some 10 percent of the land area of the state) of agricultural land. This area will consist primarily of Soil Capability Classes 1, 2 and 3 but will include adjacent areas of other classes such as pastures, woodland and other land necessary to establish continuous areas, to control erosion and drainage, and to encourage viable farm units.

-That such land be preserved by the state purchase of development rights when offered, with the owner reserving the fee and all other rights.

-That those areas to be preserved be designated by the zoning authority or other duly constituted town body, aided by a subcommittee of local farmers and working under guidelines established by the state authority created for the administration of the preservation program. The town shall act within one year from the time the guidelines are established. Following the designation of the areas to be preserved and upon such declaration, these areas shall not be available for development purposes; and if the town does not act, the state authority is empowered to act.

-That upon designation of such areas by the town and/or state authority, the state purchase development rights when offered.

-That the duly constituted state authority establish the procedures for acquisition of these rights.

-That to administer this program, there be an independent, unpaid authority or commission made up of nine members consisting of: a) the commissioners of Finance & Control, DEP, and Agriculture; b) four members appointed by the Governor: two to be farmers; and c) one member to be named by the President of the Senate and one member named by the Speaker of the House. No more than three of those six appointees shall be from any one political party. The members...shall serve staggered five year terms. The Chairman... shall be elected annually from among the six appointed members but his election is to be voted on by all the members of the authority. The Chairman... with the approval of the directors shall appoint an Executive Director, who shall be an employee of the authority -- paid a salary prescribed by the authority and approved by the Governor.

-That to finance this program there be authorized a \$500,000,000 bond issue to be retired by a one per cent tax on all real estate transfers, such bonds to be issued as needed.

-That a final report be written by Dr. Paul Waggoner, Robert Josephy and Don Tuttle; that the Policy Committee be given authority...to secure the necessary expertise to draft sample legislation for submission with the report. Following completion of the final report, the Task Force shall meet to act thereon.

Copies of the preliminary reports of the three Task Force subcommittees are available from Don Tuttle, Executive Secretary of the Task Force, Room 269, State Office Building.

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long island sound study

The New England River Basins Commission Long Island Sound Regional Study was described in the previous Bulletin issue. The study has since completed its draft plan, a publication summarizing that plan and a draft environmental impact statement on the plan.

-The summary, People and the Sound - a Plan for Long Island Sound is available from New England River Basins Commission, 270 Orange Street, New Haven, Conn. 06511.

-The draft main report and impact statement may be seen at NERBC in New Haven, the RPAs, and libraries in New London, Old Saybrook, Branford, New Haven, Bridgeport, Norwalk and Stamford.

-Public hearings on the draft plan will be held in Connecticut in:

New London -	Jan. 7, 7:30 p.m. Auditorium, New London High School
New Haven -	Jan. 8, 7:30 p.m. Conte School
Norwalk -	Jan. 9, 7:30 p.m. Auditorium, Nathan Hale Middle School

recreational land

shrinking resources for expanding population

Connecticut is the fourth most densely populated state in the nation, with more than 600 persons per square mile and a growing population. This increasing pressure results in diminishing open space and severe strain on the state's limited land and water resources. Because Connecticut is such a small and densely populated state, efficient use of its natural resources is essential if all competing demands are to be met.

Outdoor recreation is one of those demands, and pressure on recreational lands and facilities grows not only with the population but also the increasing wealth and leisure time of Connecticut citizens. Recreational activities can determine how land is used - whether a new amusement complex or racetrack is constructed, or the land is left in its natural state for hiking or wildlife study purposes. Conversely, land use can also determine recreation opportunities. Either way, the key for outdoor recreation is quality - quality of recreational experience, and at the same time, quality of the environment. Outdoor recreation plans can go hand-in-hand with preservation or harmonious multiple use of open space. In order to ensure quality of both recreation and environment, sponsors of recreation activities must plan for the future in a manner which will manage recreation facilities within the limits of the natural land and water resource base.

Outdoor recreation has an added impact on environmental quality and municipal land use, for money to purchase recreational land is available both from the

Federal Bureau of Outdoor Recreation and the state DEP's Land Acquisition Program. With the two programs combined, the net cost to a municipality would be only 25 percent of the cost of the land acquisition - the federal government will pay 50 percent and the state 25 percent of projects they have approved.

Application for both federal and state funds must be made through DEP's Land Acquisition Unit.

The fact that money is available to help towns purchase land for recreational purposes makes recreational land a factor in most municipal land use plans.

In addition to the potential open space made available to towns through the shared funding program, however, recreational lands have another significance for land use planning. The federal government, as a condition for giving BOR funds in any state, requires preparation of a five year action program for outdoor recreation in that state. Connecticut has prepared such a plan.

SCORP, the Statewide Comprehensive Outdoor Recreation Plan, is Connecticut's strategy for meeting the growing needs and demands of the state's citizens for both expanded outdoor recreation and increased natural resource protection.

SCORP sets out a blueprint for a five-year program of acquisition and development of recreation lands and waters. The plan calls for the expenditure of \$61 million for 35,000 acres of open space, both for recreation opportunity

and resource protection. The recommended state share of the acquisition program is \$27 million, the federal share is \$23 million, and the municipal share is \$11 million. The plan recommends, as part of the state share, a \$10 million Special Projects Acquisition Fund to allow the state to take advantage of major opportunities, beyond the capability of the regular acquisition program, which may require timely action.

According to SCORP, first priority for action in the next five to ten years must be given to land acquisition to assure the long-term availability of needed lands for public use.

Particular emphasis must be placed on the following types of acquisitions:

- Acquisition designed to preserve a diminishing landform, such as wetlands, natural areas, and potential groundwater or surface water supply sites.
- Acquisition designed to provide public access to marine and inland waters, such as boat launching areas, permanent fishing easements, ponds and lakes, and streambelts.
- Acquisition designed to complete existing recreation or open space areas.
- Acquisition designed to expand conservation and recreational opportunities, such as wildlife management areas, state forest and park expansions, and



floodplains.

- Acquisition designed to purchase unique or otherwise desirable areas, such as farmland, ridgetops, vistas, historic areas, and archeological sites.

SCORP also includes 105 recommendations concerning transportation, conservation and preservation, state and regional conservation and recreation, local recreation and administration, and future planning.

Worthy of note...the Connecticut General Statutes provide for a limiting of liability of property owners of land open for recreational purposes (Chap. 925, Sec. 52-55 7g-7j). This helps encourage private landowners to allow public use of parts of their land.

For further information...

-Details on BOR and state funds in February 1973 Citizens' Bulletin, pp. 6-7, and from DEP's Land Acquisition Unit, Room 549.

-A citizen summary of SCORP will be available in several months from DEP, Room 110.

state-owned lands management for maximum benefit

SCORP recommends state and local purchase of land - this acreage would be in addition to the 180,000 acres of Connecticut's three million which are already state-owned. These 180,000 acres which are under DEP jurisdiction, have a greater impact than their numbers suggest, for most of the lands are kept open for public use and enjoyment - a public which makes 10 million visitations a year, a number which is growing steadily. The entire acreage is managed by several units in DEP's Conservation and Preservation Division. On the 90 state parks and 30 state forests, recreation opportunities - some year round - are available. These include camping, swimming, picnicking, hiking, cross-country skiing, horseback riding, bicycling, motorcycling, snow-

mobiling, boating, hunting and fishing. Natural trails, historic sites, fish and wildlife propagating centers and museums are also located on state land. In addition, private land is leased by the state for public hunting and fishing purposes.

Wildlife management is practiced on 135,000 acres of the land under DEP jurisdiction. Habitat improvement - creation of vegetative conditions giving a favorable environment for resident wildlife species - is undertaken here. Since disappearance of habitat is the major factor placing animals in the endangered species category, DEP is putting much effort into reversing this trend.

DEP's Wildlife Management Unit supervises three main types of habitat improvement.

- Habitat improvement for farm wildlife such as pheasant, quail and rabbit includes planting, grafting, clearing and mowing. These areas are hunted most intensely.

- Habitat improvement for forest wildlife is done in roughgrass and woodcut areas where deer and grouse live. The work done in these areas includes clearing, selective thinning, planting grasses and clovers, mowing, and planting fruitbearing trees and shrubs. Clearing does not have to be done in large areas, since one acre of actual clearing or thinning in a forest directly improves many acres of surrounding forestland.

- Habitat improvement in wetlands primarily involves creation of standing water in those areas choked with vegetation, since most ducks and shorebirds avoid areas without standing water. This can be done by impounding the water of inland marshes, or creating potholes. Other improvements include clearing to make way for aquatic or herbaceous planting, water level manipulation, maintaining herbaceous plots, repairing dikes, maintaining and erecting new osprey, goose or wood duck nesting boxes, and re-locating beavers.

The habitat improvement work is carried out by biologists from DEP's four regional field offices.

DEP's Wildlife Management Unit also provides technical supervision for the purchase and liberation of wildlife by private groups and is responsible for administering federal aid programs as they pertain to wildlife management and land acquisition. It offers technical assistance to private landowners, developers, planning agencies, the federal government, other state agencies, conservation commissions, and the general public, for land owned by them. It also engages in research which includes making inventories of certain species and searching for information that can be applied directly to management.

190 acres of DEP-managed land are devoted to state hatcheries, which produce more than 800,000 fish with which state waters are stocked each year.

Over 800 additional acres administered by DEP constitute Indian reservation lands which are not open for public use. P.A. 73-660 transferred responsibility for Indian lands from the Department of Welfare to DEP and the newly established Indian Affairs Council. DEP and the Council are now inventorying the lands and will shortly conduct a census of the Indian population. The reservation lands provide housing for a small number of tribal members, and serve as the focus for tribal gatherings and related activities.

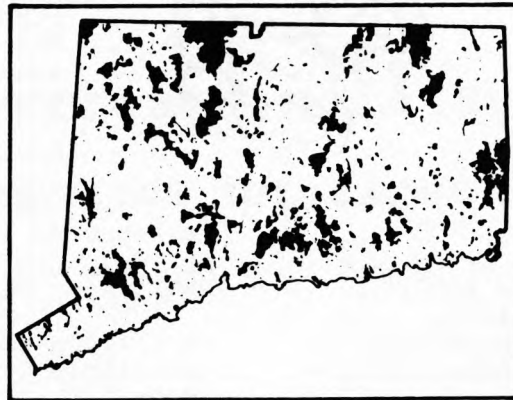
DEP-owned lands are acquired through the efforts of its Land Acquisition Unit. Some 1,000 acres a year over the last 20 years have been acquired by DEP and its predecessors.

Should any DEP-owned land be declared excess and able to be sold, the municipality in which the land is located is given first option to buy the land. P.A.74-203 provides that prior to the sale of any state-

owned land, the state treasurer shall first notify in writing the Chief Executive Officer of the pertinent municipality, who has 45 days to declare desire to purchase the land. Sale of land, as well as its acquisition, is handled by the Land Acquisition Unit.

For further information...

- DEP Parks and Recreation Unit, Room 267
- DEP Wildlife Management Unit, Room 250
- DEP Fish & Waterlife Unit, Room 255
- DEP Indian Affairs Coordinator, Room 248
- DEP Land Acquisition Unit, Room 549
- DEP Forestry Unit, Room 262. See article on forestry in previous issue for in-depth discussion of this subject.



Existing Open Space and Recreation Areas
From the Plan of C and D

preservation of our natural heritage

Land may be preserved in its natural state for recreational purposes or because natural resource limitations restrict its use. Other sites of unique character should be preserved for their educational, scientific or natural interest.

Laws passed in 1969 and 1971 (now Sec. 23-5a-i of the General Statutes) declare it to be the public policy of the state that "carefully selected areas of land and water of outstanding scientific and educational interest be preserved", and establish a Connecticut system of natural preserves. A "natural area" is defined as "an area of land or water or land and water, containing or potentially containing, plant or animal life or geological features worthy of preservation in their natural condition".

The DEP Commissioner is empowered to establish a natural areas system of not more than 10,000 acres to be maintained in as natural and wild a state as is consistent with educational and scientific purposes. The areas may be included in the system only after public hearing.

A seven member Natural Area Preserves Advisory Committee was also created to identify possible areas for inclusion and recommend establishment and maintenance standards. It is chaired by Theodore Bampton, DEP Deputy Commissioner for Conservation and Preservation.

A preliminary inventory of Connecticut's natural areas to determine their location and value was taken by the New England Natural Resources Center and the Connecticut Forest and Park Association. This work was funded by the New England Regional Commission and local foundations. The data thus provided is one of the bases for the decisions of the Committee, and it is also being provided to municipalities through DEP's Natural Resources Center. With the completion of the initial survey, which was carried out New England-wide by the New England Natural Resources Center and cooperating state groups, a New England Natural Heritage Council has been formed, to act as a regional clearinghouse and assume primary responsibility for implementing management and protection programs for areas of regional significance. The Connecticut Chapter of the Nature Conservancy and the Forest and Park Association are currently discussing with DEP methods to update, maintain and expand the inventory, and develop protection programs.

For further information...

-The survey data has now been stored on computer, and print-outs are available for study at the Connecticut Forest and Park Association, 1010 Main Street, East Hartford, Connecticut 06108; and at DEP's Natural Resources Center, Room 561. RPA's and other statewide organizations also have print-out information on areas within their regions.

preservation of our social heritage

Land may be valued for and used according to its natural characteristics. It may also be valued for the social use to which it is, or was once, put. Irreplaceable features of the man-made environment must be treated as carefully as those of the natural environment, for both are part of our heritage.

To this end, the Connecticut Historical Commission has undertaken a statewide survey to identify sites and districts of historical and architectural interest - some 4,000 sites at present. Inventory of an estimated 70,000 additional resources will be a major activity of the Commission in the foreseeable future. The inventory is now being used to spotlight endangered sites, and to identify nominations to the

National Register of Historic Places. Registered sites are eligible to receive matching grants for certain costs of restoration or support of the adaption of the sites.

Localities may establish historic districts (Chap. 97, Sec. 7-147a-m). To date, some 36 have done so, and the historical Commission is eager to help others in delineating boundaries. The Commission will also provide matching grants in aid up to 50 percent of the total cost for acquisition and restoration of historic structures and landmarks.

This program can be an added tool to preserve the quality of life in Connecticut, and to resist incongruous land uses

which may be proposed for valuable areas.

In the future, the Historical Commission sees its role evolving further into areawide rather than structural preservation and regulation, and increasingly emphasizing planning. The Commission at present works with both the Public Utilities Commission and the Department of Transportation to minimize the effects of agency construction activities in historic areas.

For further information...

Connecticut Historical Commission, 59 South Prospect Street, Hartford, Ct. 06106, Tel. 566-3005. The Commission will have, sometime in the new year, Volume 1 of a State Historic Preservation Plan, a ten year outlook on



their programs which was required by the Department of Interior as a prerequisite to participation in the National Register Program. This will illuminate the philosophy, problems and prospects of historic preservation.

preserving open space

gifts of land

In any discussion of land use programs in Connecticut, private donation of land for public use must be considered as one of the most valuable tools for preservation of open space. Such donations can take many forms--of outright gift to a public, private, state or local group, of "less than fee interest" such as a conservation restriction or easement whereby the owner keeps title to the land, but claims a tax abatement by legally agreeing not to use the land in certain ways defined by the particular easement, or of agreement to open private land to certain public usage.

Descriptions of ways to donate land with benefits for both the donor and the recipient are set forth in Land - The Most Enduring Gift, a DEP booklet by George Russell, and Private Approaches to the

Preservation of Open Land, a book by Russell Brenneman, Esq. Space does not permit their reprinting, but both are comprehensive and excellent.

As Governor Meskill wrote in the introduction to Land - The Most Enduring Gift, "The public donation of land by private individuals is one of the most significant environmental actions which can be undertaken by a Connecticut citizen. There is no more enduring gift which can serve the public and the donor than land."

For further information...

- Land - The Most Enduring Gift, from DEP, Room 110.
- Private Approaches to the Preservation of Open Land is available from Mrs. John Merrill, 13 Woodsea Place, Waterford, Connecticut, 06385. Paperbound \$5.00, hardbound \$6.00.
- A speech of the same name providing an

excellent discussion of the topic is available from The Connecticut River Watershed Council, 125 Combs Road, Easthampton, Massachusetts, 01027, for 50¢.

purchase of land

A gift of land is a boon for local land trust, municipality or state. All will, however, purchase land if it is of value, meshes with their open space or master plans, and if they are financially able.

If an organization or municipality does not have sufficient funds to purchase immediately but wishes to do so in the future, and the present landowner can or will not wait to sell the land - the land often goes to the immediately available highest bidder, to the detriment of community open space plans.

The Nature Conservancy, which has a Connecticut Chapter, can be of great help in emergency situations of this kind. The organization will buy and hold the land until a private organization can collect the funds to buy it for itself; or it will loan the funds for the purchase at low interest rates.

At present, the Conservancy holds 85

preserves totaling more than 7,200 acres, most of which were donated to the Conservancy. 40 percent of these acres are being held for eventual purchase by other organizations.

Federal and state funds are also available to aid municipalities in land purchases. See previous article on Recreation in this issue and also February 1973 Citizens' Bulletin.

For further information...

- The Nature Conservancy, Connecticut Chapter, Science Tower, P. O. Box MMM, Wesleyan Station, Middletown, Ct. 06457, Telephone 344-0716.

land trusts

One of the most effective ways to preserve open land in a municipality or region is to establish a local land trust. A land trust is a private, non-profit organization set up to receive and maintain land. A gift of land is made simple if a local land trust exists to handle the transaction; small natural areas which a state agency or private nature center may find too burdensome to maintain are welcomed by many land trusts, and the donor can give outright, grant easements or restrictions, or arrange matters to his specifications.



A land trust is flexible and adaptable to local needs; it can work easily with both public and private parties, and can be a valuable ally of conservation commissions.

There are some 67 land trusts in Connecticut, with total holdings of more than 4,500 acres and a combined membership of approximately 5,500.

For further information...

- For a good description of the beginnings and workings of a land trust see "Preserving Small Natural Areas", by Jack Gunther, President of the New Canaan Land Conservation Trust. From DEP, Room 110.
- The Nature Conservancy and many land trusts are investigating the possibility of forming a statewide land trust council as a service organization for land preservation organizations. For further information contact NC, 344-0716.

transportation

inadvertent land use policy

We have a national land use policy - it's called the Interstate Highway System. Paraphrase of Daniel Patrick Moynihan.

* * * * *

"America says three cheers for automobiles. Our streets are now clogged with slow, bulky horse-drawn vehicles of every size and description...and the obvious mess and stench that results. In another 50 years, our fast populating cities would be uninhabitable if it weren't for the general adoption of the swift and nearly odorless auto...IN THE NICK OF TIME. Vote for better roadways in 1900."

The words in the latter paragraph are from a poster heralding the automobile as the salvation of the nation's cities which, at the time, were faced with massive manure disposal problems caused by horse and buggy transportation.

In the past few years, however, we have learned the true costs of the "swift and nearly odorless auto" -- unhealthy air, energy shortages, expensive highways, and the erosive decentralization of our cities.

The automotive air pollution problem is serious, complex and immediate. The U. S. Environmental Protection Agency (EPA) has directed a number of states, including Connecticut, to cut automotive emissions dramatically in order to meet federal health standards for photochemical oxidants, commonly known as smog.

In fact, monitoring data collected by the Department of Environmental Protection shows that oxidant levels have reached concentrations five times higher than the allowable federal health standard. These levels have prompted EPA to direct Connecticut to bring oxidant levels down by decreasing total hydrocarbon emissions approximately 70 percent. Because

stationary sources of hydrocarbons are already strictly controlled in Connecticut, most of the decrease must come from reductions in automotive emissions.

The Department of Environmental Protection will soon be holding public meetings on a series of proposals for transportation controls to limit these pollutants in the greater Hartford, greater New Haven and Fairfield County areas. These plans will place primary reliance on an expanded public transit system to get people out of their cars and thereby achieve the federal clean air standards - and in doing so will have obvious land use implications.

Air pollution generated by automobiles has a second major effect on land use patterns and options. If alternate transportation systems are not developed, some areas of the state may be forced in the future to choose between cars and commercial/industrial development. A new development, such as a shopping center, which attracts cars and concentrates automotive hydrocarbons or an industry which emits hydrocarbons, will not be permitted under federal law if those developments would push an area's pollution levels over the federal ceiling. In these cases, the only way to push the levels under the ceiling and provide a safety valve for future economic growth is to develop a strong public transit system. (For in-depth discussion of indirect source and transportation control programs, see the later article on federal air pollution laws).

The deficiencies of the state's public transit system need not be documented here. Last winter's gasoline crisis should have made it clear to all that the current transit system is inadequate. During those bleak months, many people found that there was virtually no public

transit alternative to the private car. Many learned in a very personal way how far Connecticut's rail and bus systems had deteriorated and how little had been done to develop any innovative transportation solutions. In short, most of us learned just how dependent we are in this state on the private automobile for commuting to work, getting to the store, and, in general, going about our daily business.

Part of the reason for this dependence is the fact that the state spends \$270 million every year on expressways and related facilities for automobile-oriented transportation. On the other hand, the state currently anticipates spending only about \$300 million during the entire decade from 1970-80 on capital improvements and subsidies for critically needed bus and rail service. In other words, public transit will get only one-tenth of the money spent for expansion of the state's automotive transportation system -- a disturbing allocation of resources during the current decade of energy shortages and air pollution alerts.

Another part of the reason Connecticut found itself without alternate transportation systems last winter is that the New England region as a whole is in transportation trouble. The area's rail system is currently operating at one-third of capacity. Literally hundreds of miles of track lie abandoned. Service is uncertain at best; and, incredibly, the Secretary of the U.S. Department of Transportation has proposed that 25 per cent of the remaining system be abandoned. He apparently has not considered the area's rail and bus shortages and its energy and air pollution problems.

The erosion of the region's rail system is due to a number of factors, the principal one being a federal transportation policy which subsidizes truck transport through the interstate highway construction program but provides no comparable financial support for rail systems. As a result, the nation's dwindling petroleum reserves continue to be wasted because former rail users must now resort to private cars and trucks. This shift in transportation mode is highly inefficient -- a single rail of track can move between twenty and forty times the number of people per hour as one lane of highway. In terms of energy savings, public transit, in

general, is two-and-a-half times as efficient per passenger mile as the automobile. An added bonus, important in Connecticut, is that public transit is also approximately five times cleaner.

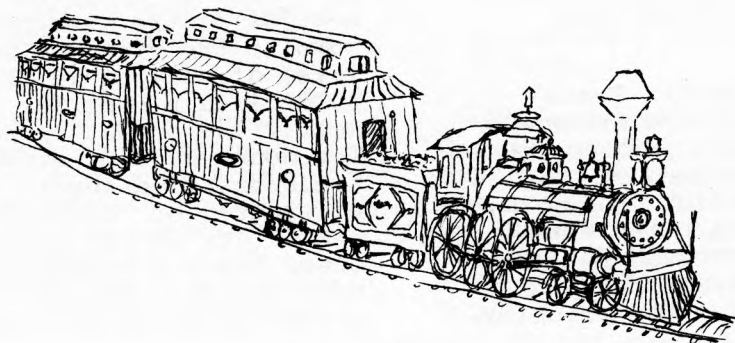
Another problem generated by the present transportation system is urban sprawl. During the 1960's, highway construction, coupled with widespread car ownership, focused growth on many areas in Connecticut that were unprepared for the development explosion that followed.

From 1960 to 1970, the total amount of built-up land rose from 300,000 to 500,000 acres, an increase of 63 per cent in just ten years. Conversion of open land to residential development led the way. At the same time, the pattern of development also changed. House lots became larger -- while the population grew by 19 per cent, the amount of open land converted to residential use increased 53 per cent. Large lot subdivisions served by new roads became common and more than 100,000 acres of farms and forests disappeared.

Significantly, during the same period the number of families with two or more cars increased 65 per cent, automobile registrations increased 57 per cent, and the number of vehicle miles traveled increased 64 per cent. Meanwhile, bus ridership dropped 50 per cent and train ridership declined 17 per cent.

During that decade, the major cities in Connecticut lost population. Suburban living, based on the car, became the dominant way of life. The dispersion of population to the developing suburbs began helter-skelter, with the only unifying thread being the roads that enabled people to live further from their work. Some communities saw their populations increase 100 per cent in ten years, requiring major capital expenditures for new schools, sewer, and more and better roads. The shift to the new lifestyle was largely unforeseen by municipal governments, and, as a result, explosive growth led to explosive problems: sky-rocketing mill rates, traffic tie-ups, large-scale septic failures, expensive sewerage, and overcrowded schools. In urban planner Wilfred Owen's words, we created "accidental cities".

The cities may have been



"accidental or unplanned in the way they grew, but the fact that they were targeted for growth was anything but a chance occurrence. The day these towns came within a short drive of an interstate highway, their growth was as predictable as if the town fathers had somehow eliminated taxes. Planning a highway means planning growth. Unfortunately, in most cases, the planning stopped at the highway guard rail, and the towns were left to cope with the growth as best they could.

We have neither sufficient clean air nor enough energy or enough land to continue our dependence on the automobile. Transportation priorities must change. Highways planned during the fifties and sixties, based on the assumptions of those years, should be re-examined and, in some cases, scrapped. Hundreds of millions of dollars now budgeted for highway expansion could, and should, be earmarked for public transit.

THE HIGHWAY TRUST FUND

In 1973 a long fought for breakthrough on the federal level released some of the millions of dollars in the Highway Trust Fund earmarked for highway construction and made them available for public transit.

Governor Meskill hailed the move in a statement saying, "The new bill means that we no longer have to think 'just highways'...we will be able to trade off for such alternatives as buses, exclusive bus lanes and rapid rail transit...the law provides states and municipalities with flexibility to determine their own transportation priorities."

Connecticut residents also succeeded in "boosting" the state's Highway Trust Fund, an event of somewhat lesser importance as the state trust fund provides monies principally for operations, not major construction, of transportation facilities. However, the amount committed to highways in the state is still disproportionate, as may be seen in the state's Master Transportation Plan.

THE MASTER TRANSPORTATION PLAN

Connecticut has had a Master Transportation Plan, prepared by the Department of Transportation (DOT) each year since 1971, and land use implications of the state's present transportation policy can be formulated from its data. The words in the 1974 Plan stress improved public transit and a more effectively integrated transportation system as a state priority.

Yet, for example, funding allocation projections in the Capitol Planning Region beginning this year and going through 1990, allot over one billion to highways and little more than \$100,000 to public transit. The explanation set forth in the Plan for the disparity in this kind of distribution of funds between the two modes at this time is that highway construction has historically been a function of government, and mass transit construction has been a result of private enterprise projects. Therefore, the Plan states, the highway system needs are more specifically defined for the Department of Transportation (DOT).

Historically, much more money has been available for highways than for public transit, on both federal and state levels. On the state level, there have been specific funds earmarked for highways each year, but funding for public transit projects has not been so dedicated and has had to come from the Federal General Treasury revenues, or from the State Public Service Tax Fund and the State Bonding Commission.

The chief source of state capital funds for any public transportation project are state bonds. Special Act 74-102 gives the State Bonding Commission the power to authorize the issuance of bonds up to \$113,700,000 for public transportation projects.

Legislation coming out of the 1973 and 1974 General Assemblies also provides funding for public transit. Public Act 73-675, which went into effect July 1, created the State Transportation Fund. This act consolidates into one fund all monies currently available to the Bureau of Highway and Rail and Motor Carrier Services, and monies generated by the Bureau of Aeronautics and Waterways. The act also requires that not less than 10 per cent of the revenues and receipts of the Fund be used for public transit for fiscal year 1975 and 1976, 15 per cent for fiscal years 1977 and 1978, and 20 per cent for each of the two following fiscal years thereafter.

A winter-long bus strike in 1972-73 gave rise to a system of regional management of public transportation which commits the state to subsidize "a basic level of service". The state will spend \$6 million a year for local bus services, nearly twice what is being spent now. The money will be drawn from existing transportation funds. The plan covers all losses on "basic levels of service," and offers 50 per cent subsidy to any other lines a community may wish to keep or add. The plan provides for five state-appointed regional transit managers.

What is really needed, however, is a major reallocation of funds for public transit purposes, not just an addition of minor amounts of funding.

HARTFORD AREA LAND USE/TRANSPORTATION STUDY

Connecticut is farsighted enough to have begun a model study, the first in the nation, of transportation and land use in a region - the Hartford area.

For the first time, the state, regional agencies and private groups concerned with overall planning, transportation planning, and environmental protection will work together

to develop coordinated, comprehensive plans that can consciously shape the quality of our future.

Policy direction for the program will be provided by six state

agencies: DOT, DEP, Bureau of Planning and Budgeting of the Department of Finance and Control, Department of Community Affairs, Department of Commerce and the Commission on

Human Rights and Opportunities; the Capitol Region Council of Governments; the Greater Hartford Transit District; the Downtown Council; the City of Hartford; and Citizen representation.

Basic land use, transportation, environmental, social and economic policies will be integrated into the development of regional land use and transportation options. An objective search will be made to identify and evaluate all possible land use and transportation options, some including the region's planned highway links, some not. All current highway and transit plans will be scrutinized, along with alternatives to these plans, to determine their relative merits.

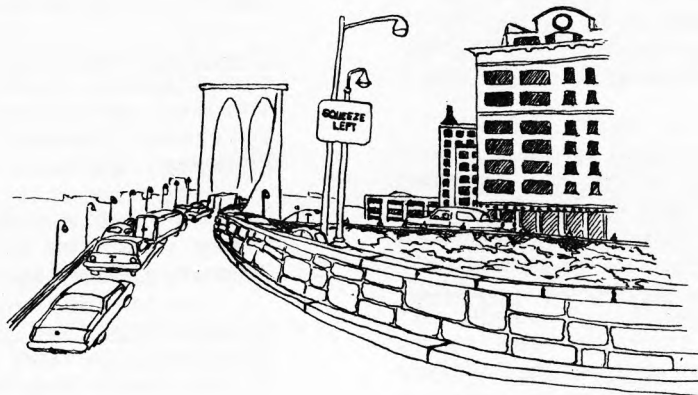
The basic options, along with those projects consistent with each option, will then be evaluated from many points of view, including the need to channel development so that it will not dissipate our natural resources; discourage hazardous development; move people and goods efficiently; conserve natural resources;

achieve and maintain environmental quality standards; be responsive to the needs of all people, especially the underprivileged and the elderly; be economically feasible.

The program is a direct response to the clear need to take a fresh look at regional land use and transportation plans in an interdisciplinary framework, with a high degree of community participation. It is based on a recognition of the interrelationship between land use and transportation, the fact that land use and transportation decisions have far-reaching environmental, social and economic consequences, and new legal requirements for an exhaustive examination

of alternatives to projects with significant environmental impacts have been set. Specific objectives of the program will be to:

- Tie together land use and transportation decisions.
- Consider all the controllable variables at once -- land use policy and controls; transportation technology and network; incentives to choice of transportation mode; and fiscal policy.
- Provide short-range solutions that can be implemented by 1980 in the context of long range options that will foster and preserve a high quality of life.
- Fully evaluate the social, environmental and economic impacts of each option.
- Specify the implementation steps required to achieve each option.
- Develop and review the options in cooperation with regional agencies, area cities and towns and citizens.
- Recommend a course of action for implementation.



The program will be conducted within the Capitol region, with a potential for later expansion statewide. The responsibility for accomplishing the technical work will be assigned to a prime outside contractor, Parsons, Brinkerhoff, Quade & Douglas, Inc. This firm will be assisted by sub-contractors, state and regional personnel. It will not choose among the options, merely re-

search and present them.

The program is a new form of land use and transportation planning that will balance a wide range of often conflicting interests in a calm, deliberate atmosphere. This study should ensure that environmental problems will be anticipated and avoided by dealing with the basic variables affecting environmental quality -- land use and transportation -- early in the planning process. Substantial economic and employment opportunities should also result by fulfilling the need for major new transportation facilities, both public and private.

LOCAL TRANSPORTATION FORESIGHT

THE WESTPORT MINNY BUS

The Transit District in the town of Westport is well on its way to convincing its 27,000 residents who own 18,000 cars that it is cheaper in many ways to maintain a public transit system than it is to build parking lots and otherwise maintain private automobiles.

The Westport Transit District began operating its Minny Buses in August, and has experienced a steady and unexpectedly high demand for its services. It boasts the buses are "just in time to beat the high cost of driving, the agony of parking, and the headache of traffic".

The service saves individuals and the community fuel, time, and pollution. Use of the system has been made as convenient and economical as possible. The Transit District estimates that riding in one of the eight 16-passenger buses on one of the seven regular routes costs about four cents a trip for regular users.

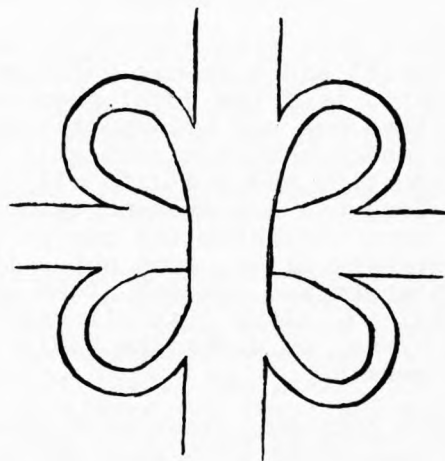
The buses have 95 horsepower diesel engines that get 15 miles per gallon, and produce less pollution than the average car. The service is offered every half hour 12 hours a day, six days a week - reducing the number of cars and therefore the amount of traffic in the downtown area, minimizing wear and tear on mother - the family chauffeur - and giving new mobility to those who do not drive. The buses have deluxe interiors, picture windows, and air conditioning.

One of the most appealing aspects of the service is the cost to the user. A husband and wife pay \$25 for each to get an i.d. Minny Pass card with a photo which is good for unlimited rides for an entire year. Additional children up to grade 12 pay \$7 each, single adults \$20, children without parents \$15, and senior citizens 62 and over, \$15. In addition, single rides with transfers are offered for 50¢.

The fares pay for part of the service, and the rest of the cost is covered by a combination of federal, state and local funds. Maps of the bus routes and the time schedules are available and easy to read. There are no designated bus stops because the buses will stop anywhere along the route when they are waved down. Later this year, the Transit District expects to add a Maxy Bus to the service, which will ride the school and beach routes depending on the season.

For further information...

- Connecticut Master Transportation Plan, Department of Transportation, P.O. Drawer A, Wolcott Hill Road, Wethersfield, Ct.
- Cost of Sprawl, study cited in article on Housing, which has statistics on transportation efficiency of various land development patterns.
- The Highway Fund Publication, excellent examination of state transportation funding, 50¢ from the League of Women Voters of Connecticut, 60 Connolly Parkway, Hamden, Ct. 06514
- Office of the Public Counsel, Rail Services Planning Office, Interstate Commerce Commission, Washington, D.C. 20423
- Annual Report of the U.S. Railway Association, the organization established by the Regional Railroad Reorganization Act of 1974 to set up the new rail system. 2100 Second Street, S.W. Washington, D.C. 20595



energy siting

decisive factor in land patterns

"The interrelation of energy and land use planning has been largely ignored in the past, but must be considered now and in the future in terms of energy policy development and implementation," - State Energy Administrator Lynn Alan Brooks.

Land use patterns affect energy usage, particularly for the siting of power plants, transmission and distribution lines. Developments of all kinds, whether they be residential, commercial or industrial, generally depend upon readily available supplies of electricity for their services; consequently, increases in such development may mean increases in the need for more electrical facilities. Additional supplies of electrical power are demanded as the energy crisis grows and fossil fuel supplies run low.

The siting of these power facilities involves many land use considerations. Most generating plants share the common requirement of needing a source of cooling water, but depending upon the type of plant, they may be sited in different areas. Fossil-fueled plants are generally located near the urban centers which consume most of the power, so often the sites are in industrial sections located in harbors or on rivers. Nuclear power plants, however, must be sited away from areas of dense population according to Federal Atomic Energy Commission criteria, so they are located in regions which may have other potential recreational uses (such as an undeveloped site on Long Island Sound). Hydroelectric pumped storage peaking plants, although not using a source of cooling water require large tracts of hilly open space land for the various reservoirs which need to be constructed, and there are many land use ramifications of such a location.

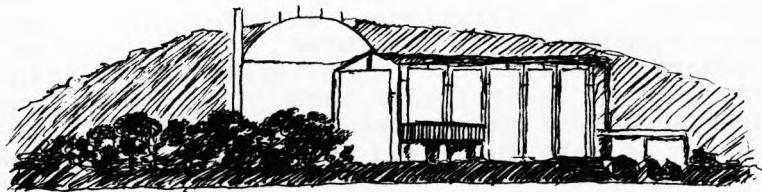
Transmission lines often require many acres of land which must be kept relatively clear of large wood vegetation, thus creating a "swath" effect in forested areas. Although the utility companies as a matter of practice usually bargain with the landowner for direct purchase of land for their transmission rights-of-way, they are nonetheless entitled to exercise "eminent domain" if

the landowner refuses to sell (that is, they may take easements for whatever property is necessary for power facility siting, provided "just" compensation is given to the landowner).

Various factors should be (and in many cases already are) considered in the siting of these facilities. Do the facilities meet with existing environmental standards? Are the surrounding land uses compatible with the facilities? Do the facilities encroach on any parks, forests, or other dedicated open space such as wetlands? Is there any conflict with a scenic, historic or recreational resource? What are the aesthetic implications of siting these facilities in a certain location?

Recognition of the substantial impact power plants and transmission lines can have on the environment bore fruit in Connecticut in June, 1971, with the passage of the Public Utility Environmental Standards Act (Sec. 16-50g-w of the General Statutes). The act established the Power Facility Evaluation Council, which must approve the need, location and construction of power plants and transmission lines in the state, basing its decision primarily on environmental considerations.

Every organization or person engaged in generating electric power must submit an annual forecast to the Council. The document must contain a ten-year forecast of power loads and resources (each even-numbered year the report must contain



a twenty-year forecast). The report must include a listing of generating facilities, transmission lines in service, those for which property has been acquired, those planned or forecast as needed and a description of steps taken to upgrade facilities.

The Council is empowered to establish regulations and standards on siting and environmental standards, or assure that activities are already in compliance with currently existing laws. This includes effluent, thermal effects, emissions, protection of fish and wildlife and other environmental factors, and the methodical elimination of overhead transmission and distribution lines.

The PFEC legislation contains another requirement significant for energy-related land use planning: every person engaged in the generation of electric power shall make a "location application", identifying the tentative location of each electric generating facility having a design capacity of more than 300MW. The application must be filed at least five years in advance of the planned commencement of construction (when that commencement is after October 1, 1979). This requirement allows the utilities to purchase needed land for energy production sufficiently in advance to allow planning and environmental studies, and it also allows the communities to plan development, taking into account the location of future sources of energy. A public hearing must be held on each location application.

Nine members sit on the Power Facility Evaluation Council, including the DEP Commissioner, and the Chairman of the

Public Utilities Commission. The Council is directed to obtain opinions and data from other state agencies with relevant expertise, and is authorized to accept data from other parties and to employ consultants. The PFEC has hired consultants for five projects thus far: four for specific siting applications, and one for an environmental study of electric transmission and distribution lines. This last study is designed to assist the PFEC in developing policy guidelines for reducing the negative environmental impact as well as evaluating the legislatively-mandated methodical elimination of overhead transmission and distribution lines in Connecticut. The study should also contain many relevant land-use considerations, such as the possibility for increased open space.

The draft regulations on this subject will be presented at public hearings throughout the state to allow an opportunity for citizen input.

For further information...

- PFEC, Room G31-A, State Office Building, Hartford, Connecticut 06115.
- The Planning and Research Unit of DEP has a number of documents of value in this area; DEP, Room 117

recreational use of existing corridors

A study concentrating on recreational uses of utility and transportation corridors in Northeastern Connecticut was recently conducted by New England Research, Inc., for the Connecticut Forest and Park Association, under contract with DEP. The study was of a ten town area including Thompson, Putnam, Killingly, Brooklyn, Pomfret, Woodstock, Eastford, Hampton, Chaplin and Ashford, and consisted of three surveys. The first was a survey of forest landowners, to determine their general profile, the characteristics and uses made of their forest land, attitudes to forest management and willingness to make such land available for public benefit. The second sought to determine the economic feasibility of a wood chipping facility in the area, and the third, the uses of utility and transportation corridors.

The latter study found at least 55.9 miles of abandoned roads in the ten-town area and 23.7 miles of abandoned railroad rights-of-way. 21 miles of gas pipeline right-of-way crossed the area of study; these are maintained by mowing to preserve a low, brush-free vegetation cover.

21.8 miles of telephone cable right-of-way and 63 miles of powerline right-of-way also cross the area. The powerline right-of-way may have a rough maintenance road with brush vegetative cover; in some, landowners are permitted to farm or plant nursery stock. The survey showed existing uses of the right-of-way (row) and abandoned roads to include hiking (minimal on row, most frequent on abandoned roads), snowmobiling (highest on row), motorcycles and ATV's (all terrain vehicles) and some other uses such as access for fire control, removal of forest products and gravel, field training dogs, hunting, etc.

Restrictions on use of these areas include the laws governing snowmobiles, local ordinances, utility company control of easements through restrictions on use (no structures are allowed under power lines, tree heights are limited) and the wishes of the private landowner who holds the residual interest in the land. Three-fourths of the owners of abandoned roads would not permit public use under any conditions, two-thirds of those owning land with utility easements would not.



In addition to those covered in this study, there are several other issues worth consideration in right-of-way recreation plans. Will the owners of the rights-of-way, or of the land itself, be liable for any recreational injuries?

Who will evaluate the environmental effects of the recreational use of the land?

Rows could serve well as permanent open space, as an "edge" separating one land use from another, as recreational areas. The state contains almost 800 transmission rights-of-way miles, representing over 19,000 acres of land, and many more unused transportation corridors. These lands could well bear investigation for land use potential.

For further information...

Recreational Uses of Utility and Transportation Corridors in Northeastern Connecticut, available for study at the RPA's and DEP Forestry Unit, Room 260.

oil drilling, docking and refinery sites

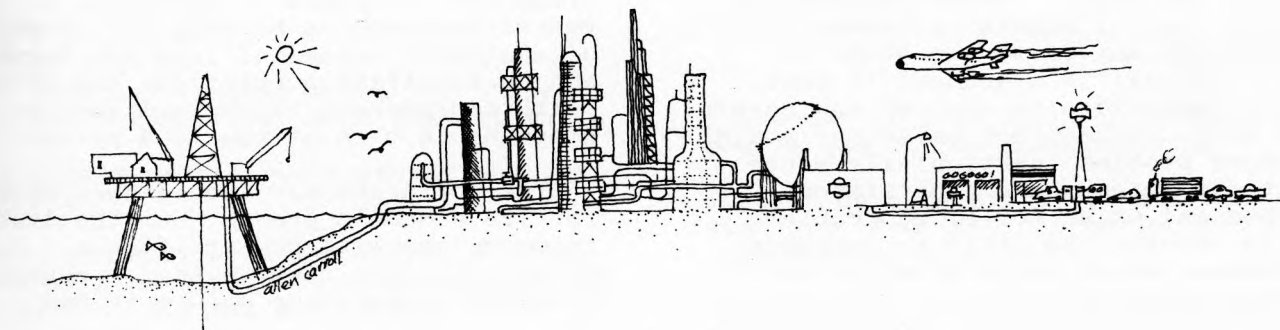
With the energy crisis has come increased pressure to drill for oil in the Outer Continental Shelf off New England, to provide docking sites for VLCC (Very Large Crude Carriers of oil, or supertankers), and to build refineries to transform the crude oil to useable petroleum products.

New England currently pays some of the highest prices in the country for oil products, as its supply points are so far away, and there is such a large dependence on the more expensive foreign (rather than domestic) oil supplies. Compounding the problem is the voracious appetite of the industrial, heavily populated east for oil products - oil companies say east coast areas consume some 40 per cent of the nation's petroleum products, yet contain only 15 per cent of the refinery capability.

Drilling is not a direct issue for the state, since no drilling has been proposed for the Long Island Sound area.

However, two tentative proposals for refineries in Connecticut were advanced during the summer, and have caused intense public scrutiny of the subject. Though no applications for any of the permits which would be required (such as air and water) have yet been made, growing public concern led the Governor to create a Task Force on Oil Refineries, charged with acting as a fact-finding (not decision-making or even recommending) body. The Task Force's findings will be thoroughly scrutinized in the state legislature, for at present no direct statutory procedures exist for oil refinery siting as they do for power plant siting (see the discussion of the PFEC).

While the Task Force study and public debate on VLCC and refinery siting are both in the initial states - the Task Force held public hearings in early December to hear citizen opinions before writing a report due soon - it is possible to sum-



marize the likely consequences of both for land use patterns.

LAND

Obviously, both would use land directly, in onshore refinery siting, berthing of ships (though VLCC, because of their size, can't use existing harbor facilities in Connecticut), and a range of associated commercial development and transportation networks, to refine, receive, deliver and consume oil and oil products. There are three possible methods of loading and discharging oil - onshore facilities in a harbor, offshore piers or single point moorings in Long Island Sound. The three options cause varying degrees of land consumption, again reflecting not only initial transfer sites, but associated storage, transport, and refining facilities needed. Tidal marshes, estuaries and other delicate coastal lands are often more convenient sites for both transport and refineries, and these are some of our most fragile and productive lands. Siting of facilities will have to be done only after detailed study of specific proposals and their likely impact on human and natural resources.

An oil refinery could also have significant impacts on area land use, in relation to secondary development such as housing and petrochemical industries. The amount of refinery-associated development may be substantial, although information on this subject is not currently available. In any case, the state would not, under current laws, be able to regulate or control land use in the area of a refinery. Planning and regulation of land use would be primarily the responsibility of the municipalities involved.

AIR

Refineries themselves are significant sources of air pollution - mainly in the sulfur oxide, particulate and hydrocarbon emissions. In terms of these three major pollutants, an oil refinery would be the largest single air pollution source in the state. Where emission of the first two pollutants in Connecticut will probably not cause the state to violate air quality standards if best possible technology is applied and careful siting done, hydrocarbon emissions could be a major problem, particularly since Connecticut already has a persistent photochemical oxide (or smog) problem, which is causing the state to implement the transportation controls which are discussed elsewhere.

However, even if air quality standards are not directly violated, major additions of air pollutants from a refinery could limit options for growth in the area in which the refinery is located, for amounts of clean air left to a locality will be significantly reduced. This means the number of new polluting sources which can be accommodated without violation of air quality standards could be severely limited.

A refinery in the 100,000-400,000 barrel per day range could also produce obnoxious odors detectable several miles from the site under reasonably common weather conditions. This would restrict population siting in areas affected by the odor and necessitate careful siting of the facility itself.

WATER

Refineries need large amounts of water for processing and cooling purposes. It is probable that in Connecticut only large bodies of water such as the Thames and Connecticut Rivers and Long Island Sound are able to receive refinery waste water without significant impairment of water quality. Air cooling could reduce the amount of water needed; so could cooling towers which produce, however, visual and fogging problems.

While best available technology can remove approximately 95 per cent of the pollutants in the discharge water, the volume of water needed for daily processes would insure impact on the carrying capacity of the receiving water body. This could limit possibility for future growth along the receiving water body, and could narrow refinery site selection substantially.

SPILL EFFECTS

In drilling or transporting oil, spills are inevitable, either from drill sites, transfer sites, tanker unloading, grounding or collision. Oil spills have major adverse effect on tidal wetlands areas and consequently wildlife, on recreation such as boating and swimming, on aesthetic values of land and water, and on shellfish populations and delicate benthic organisms which form the indispensable base of the food pyramid.

The northeast may indeed need refineries for its economic growth, but the land use consequences will be significant. Fortunately, in this case we have a chance to plan for a situation before it has

occurred - an all too rare opportunity and one Connecticut citizens should seize eagerly.

For further information...

-Potential Environmental Effects of an Oil Refinery in Connecticut, draft report

done by DEP for the Governor's Fact Finding Task Force on Refineries, from which most of this article was taken. Summary and/or technical report available from DEP, Room 117.

energy efficient development patterns

Land use patterns can have a significant effect on energy consumption. Sprawled development necessitating much travel can mean high energy consumption for the area. Clustered development with short travel distance or common heating units can be highly energy efficient.

Development design can thus determine energy consumption levels. The following consideration of this subject is edited from the September 1974 Environmental Comment, a publication of the Urban Land Institute.

NEW APPROACHES TO ENERGY EFFICIENT DEVELOPMENT SHOULD CONSIDER:

The manufacture of materials used to construct the project.

The construction process.

The physical arrangement and design solution which will require a certain level of energy consumption during the life of the development.

The energy consumption during the life of the development.

The energy consumption required for movement of people and goods within the project and to and from the project. For example, the implications of a shorter system of streets in a residential development, reducing vehicle miles and therefore fuel consumption, seem significant.

The analysis of alternate energy sources and fuels.

The re-examination of the value of development with particular attention directed to longer economical and useable life, and the energy costs of planned obsolescence.

The energy cost/savings of alternative locational decisions for various types of uses in a regional framework and the nature of that framework -- e.g., the transportation system.

CHANGES IN GENERAL LAND USE PATTERNS

The following specific items of development patterns by land use categories contain certain overall patterns which are likely to occur and should be encouraged in this society in which energy has become a diminishing resource.

In general, higher density development may occur without sacrificing necessary open space.

With the expectation there may be a commitment to a flexible multi-model expanded system of public transportation, it is suggested this higher density development be closely accessible to the system's points of embarkation.

There may be a greater move toward mixing of land uses. The past trend of zoning codes requiring homogeneity may be moving away from exclusive land use zone concepts towards planned mixed use zones.

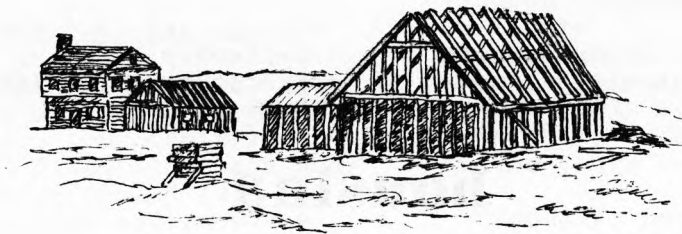
A greater emphasis on closer locational relationships among living, working, shopping and recreation development.

A new importance for the inner city.

A process of in-filling previously passed over areas in the suburban ring.

Further development of satellite communities provided they can be located on a transportation corridor.

An increased interest in opportunities for revitalization of existing under-utilized communities.



A further encouragement of sophisticated telecommunication systems as a means of reducing the present level of people movements.

FUTURE RESIDENTIAL DEVELOPMENT PATTERNS WILL SEE AN ACCELERATION OF CURRENT TRENDS

While single-family detached housing will probably remain the preferred choice among consumers, it will be a less significant segment of the market--giving way to higher density, more economical development of all types.

The cluster concept in its various forms -- attached units, detached units on smaller lots with common open space, and other configurations--will become more prevalent. This land planning concept, most often called Planned Unit Development (PUD), which has had to rely on good design, environmental concern, and to some degree, saving in some items of first cost and maintenance costs for justification--clearly has an added factor of opportunity for energy conservation. This conservation will occur both in first cost and, more importantly, in long-term costs for energy consumption for transportation within the project through reduced travel distances.

Further, the cluster concept will allow greater use of new systems which require larger scale and close proximity of structures for efficient application.

Along with clustering, highrise construction may achieve greater acceptance than in the past.

There will be a tendency toward less large-lot development in suburbia and exurbia.

COMMERCIAL DEVELOPMENT PATTERNS

Changes in this area will occur more in building design than in locational cri-

teria--with one significant exception. The large-scale, mixed-use development trend which began emerging before the energy crisis, appears to have many energy conservation advantages.

RECREATIONAL DEVELOPMENT PATTERNS

This segment of the development industry may experience the most significant change. Heretofore, recreational development has gone where the amenities--mountains, sea-shore, lakefronts, etc.--were or could most easily be created. Distance from the users market was relatively unimportant.

In the future, the selection of sites for recreational development may place greater emphasis on accessibility by public transportation and distance to potential markets than on sites that have outstanding natural amenities but have problems of difficult accessibility or great distance from user markets.

Urban recreation facilities within individual projects allowing walk-to recreation and short-trip recreation destinations substituting for long-trip destinations may be expanded.

A recently emerging concept of time-sharing ownership in second homes may prove to have an energy-conserving feature for both first development and continuing cost provided this concept is accepted in the marketplace. This could reduce the likelihood of significant impact from the physical intrusion of second home development into environmentally fragile areas.

For further information...

-The Cost of Sprawl, cite in article on Housing.

-Energy and Land Use, Environmental Comment, September 1974, pp 1-7, Urban Land Institute, 1200 18th St. N.W., Washington, D.C. 20036.

housing

multiplying with the population

Where men - or any living animal or plant - lives can have a major effect on, or is affected by, land use practices. Whether a single family house in the woods, a half acre lot subdivision, a multi-family condominium or a thirty story apartment building, housing means use of land, and activities undertaken by people living in those houses increases this impact greatly.

HOUSING AND ITS MEANING/IMPACT

From Fair Housing and Exclusionary Land Use
(cite below)

We are learning that housing, if placed in the proper context, means far more than "shelter" and its attendant physical facilities. It includes or involves:

HOUSING IN CONNECTICUT

From Facts and Issues - Land Use in Connecticut, (cite below).

- man's functioning and social well being;
- a living environment designed to take into account social, recreational, and ecological needs or factors;
- location in proximity to employment centers, with convenient, inexpensive, and efficient transportation to job markets;
- availability of adequate educational facilities;
- provision of municipal services on an equal basis;
- easy access to commercial areas and

There is a lack of concrete information about the extent and nature of housing needs in Connecticut. Organizations and agencies with long field experience believe that most governmental housing estimates, which are based largely on the census count of substandard units, annual housing starts, and other measurable



- entertainment centers;
- the right to live in the type of housing desired or affordable, without unreasonable restrictions imposed on the supply of such units (as apartments v. single-family); and
- equality of opportunity, such that an individual's income level or race does not automatically preclude him from seeking or obtaining the housing that he needs, and in the community or area he chooses.

Thus when we speak of housing, we must recognize its repercussions on equity, equality, mobility -- economic and social, as well as geographical, and the pursuit of individual life styles...

It is well-documented, for example, that there has been an accelerating pattern of higher income emigration from central cities; this, and such factors as land and transportation costs have tended to isolate lower income groups and insulate the more mobile and well-to-do segments of the population.

Likewise, the evolution of the city has set a tone in many metropolitan areas from which suburbanites have sought escape. This has been reinforced by an attitude that outer-urban homeownership is a desirable life style to which to aspire. In self-fulfilling prophecy, suburbia has become a haven from the city: a city which increasingly is being viewed as a caldron of the poor, the elderly, the minorities, and the underemployed.

statistics, do not give sufficient weight to two important factors in the housing supply: price and location.

Despite the lack of exact figures, there is ample evidence that a severe shortage of inexpensive housing exists in most of the state. A comparison of family income with the prices of housing currently on the market reveals that there is little housing available to low and moderate income families. Vacancy rates running below 1 per cent indicate an especially acute shortage in such areas as lower Fairfield County. Given rising construction costs, high interest rates, reduced building since the moratorium on federal housing programs, and a population bulge in the 15-25 age group, it seems likely that housing will become an increasingly serious problem for a substantial proportion of the population in the years ahead.

Ideally, people should live where jobs, public transportation, and social services are readily available. The trend, however, has been for industry to locate outside established cities and for shopping centers and housing to spring up on nearby undeveloped land. Mass transportation and many basic social services have remained generally available only in the cities, where job and housing opportunities are ever decreasing. Decisions to locate industry or business complexes rarely take account of the housing available to employees in the community, or the strain that will be put on local facilities.

The development of the suburbs has greatly inflated land costs, in turn causing the price of housing to rise sharply. Single family houses are now beyond the reach of those earning the median wage of \$12,000 a year (and a much higher wage in some areas). The price of houses seems likely to increase even more in the future because a large percentage of the vacant residential land in the state is zoned for single-family houses on lots of one acre or more.

To bring down housing costs and to make the wisest possible use of the diminishing supply of buildable land, it has been suggested that it may become necessary to rezone for more multi-family dwellings throughout the state, and perhaps also to reserve portions of these zones for housing for low and moderate income families. Multi-family housing is generally less expensive because of savings in construction (common walls, for example, lower site improvement costs, and reductions in the length of sewer lines, water lines, and other utilities. Also, of course, it requires less land per dwelling unit and so decreases land costs and consumes less of the remaining supply of land. (A new study, The Cost of Sprawl, documents these statements most effectively, and should be examined by any interested person. Cite is at end of article). The American Society of Planning Officials estimates that if 3 per cent of the suitable residential land in Connecticut now zoned for one acre or more were rezoned for 10 units per acre and another 3 per cent rezoned for lots of 5,000 square feet, the state could accommodate about twice the current population and still have a large amount of undeveloped land.

This would reverse the current trend toward more large-lot zoning. With virtually all residential land use decisions made by a multitude of local governments under pressure to maximize property tax revenues and minimize local expenditures, a more even balance between large lots, small lots, and multi-family lots seems a long way off. However, as land becomes

scarcer and the housing problem more acute, broader concerns may begin to take precedence over immediate local interests, much as they are now doing with environmental matters. Towns may need to take serious steps toward acquiring land and setting it aside for future housing or economic development (land banking).

While the single family home and plot of land to call one's own remains the dream of the majority of Americans, such a dream may prove to be, due to increasing population, the ultimate destroyer of land. A state with wall to wall housing on one acre lots connected by roads would present little beauty, opportunity for diverse occupation and recreation, or cognizance of the natural resource base. If we are to continue to grow - and we undoubtedly will - we must plan for that growth.

For further information...

-Facts and Issues - Land Use in Connecticut, a publication of the League of Women Voters of Connecticut Education Fund. 25¢ from LWV, 60 Connolly Parkway, Hamden 06514.

-Fair Housing and Exclusionary Land Use published jointly by the National Committee Against Discrimination in Housing (NCDH) and the Urban Land Institute. \$3 from NCDH, 1425 H Street, N.W., Washington, D.C. 20005.

-The Cost of Sprawl, report on high density planned communities as single family homes (high density communities prove to be 44 per cent cheaper, 45 per cent less polluting, use 44 per cent less energy and 35 per cent less water). Prepared by Real Estate Research Corporation for the Environmental Protection Agency, Department of Housing and Urban Development and Council on Environmental Quality. \$2.90 from U. S. Superintendent of Documents. Stock No. 4111-00021 Executive Summary 55¢, Stock No. 4111-00023.

planning for sand and gravel mining

There is a surprisingly large amount of mining in Connecticut. Excluding fossil fuels, Connecticut ranks tenth of the fifty states in the dollar value of minerals produced per square mile. Virtually all of this mining is for sand, gravel and rock materials.

Sand, gravel and rock products are

essential to the state's present economy - it is necessary to mine these products today, and to plan for their availability in the future.

Sand, gravel and rock have a low unit value; a ton or a cubic yard is not expensive. However, Connecticut uses many tons a year and the cost goes up

quickly if the materials have to be transported far. In fact, the price approximately doubles for every twelve miles the product is shipped by truck. It is therefore most economical to mine the product in the vicinity in which it will be used.

Although Connecticut has abundant resources of sand and gravel, much of it lies under land which has already been built upon, locking the resource in. In other cases the mining activity and the resultant mined-out land are so unacceptable to the public that communities have prohibited mining or have made it impractical to mine. All of this is contributing to unnecessary increases in resource costs and to probable future shortages.

The same land which contains the sand and gravel resources is very often extremely valuable for other uses. Such land is often the flat, valley-bottom land that is best for housing or farming - indeed, almost any use. There is fierce economic competition for this land, and in most cases it is developed before the mineral resource is utilized. Under these conditions it is very difficult to provide sand and gravel resources for the future without a specific and effective long term program.

A similar type of land use competition exists for the land which holds our best rock resources. The traprock ridges in the Connecticut Valley area are valuable as rock resources and also as scenic and recreational resources. Careful resource planning is essential, if both needs are to be met.

Mining of an earth resource does not have to ruin the land or leave it as a wasteland, nor does the process of mining itself have to totally disrupt a community. Without reasonable planning and regulation however, it is all too common for both of these undesirable conditions to exist.

Mining does not have to preempt other land uses. Wise land use planning can satisfy both the need for the resource and the need for construction sites. Sequential land use - providing and allowing mineral extraction before the land is committed to an end use which is incompatible with mining - is one way of approaching the dilemma. If a company has a reasonable reclamation plan, it can mine the land and then grade it to conform to its original shape or to a reasonable shape, and stabilize it with vegetation so that erosion will not occur.

In a few years the land will be ready for other uses, including water supply and residential and commercial construction.

It is most important to provide for the availability and extraction of resources



for today's needs and for tomorrow's needs. In all probability Connecticut will have to provide these resources from its own local supplies. To do so resources must be protected so that they will be available for the future, mining activity must be successfully and reasonably regulated so that it is an acceptable land use in areas where the resources must be mined, and steps must be taken to insure that the land, once the mining is finished, is not a wasteland and can be used for other activities.

At the present time there is no real plan for providing for future resource needs. In addition regulation of mining activities and land reclamation is a municipal prerogative, leading to a great diversity in degree and type of regulation, varying from outright prohibitions of mining, to effective control, to situations where mining is virtually unregulated. This present state of affairs does not really meet the needs of the towns, the resource consumers or the mining operators.

For further information...

-Mineral Resources and Mining - A Planning Report, Long Island Sound Regional Study NERBC - a summary of reports prepared by the U.S. Bureau of Mines with contributions from the U.S. Army Corps of Engineers. The summary contains recommendations of the LISRS for tentative draft regulations on mining. The report is available for review at the Long Island

Sound Regional Study Office, 270 Orange Street, New Haven, 06511; scheduled to be published in January at which time it will be available for review at libraries in the area.

-Planning with Geotechnical Input to reduce Mineral Excavation Problems; presentation by Harry Siebert. Both documents available from him, DOT, Planning and Research, 24 Wolcott Hill Road, Wethersfield; 566-2171.

-Connecticut's Declining Sand and Gravel Resources; an abstract prepared by Harry Siebert, engineering geologist, DOT. May 1967, Penn Geological Survey, Bulletin M64.

aquifers

What lies under the ground must sometimes dictate what goes on top of the ground.

An aquifer is a large, saturated, highly permeable body of rock, sand or gravel that is capable of surrendering significant amounts of water to wells. Privately owned and municipal wells constructed in aquifers supply many of Connecticut's residents. Water flowing from aquifers to streams and reservoirs also recharges surface water supplies in periods of little or no precipitation.

Pollution of an aquifer can endanger the water supply of an entire region. Excessive development on aquifer recharge areas can divert much of the precipitation that would normally infiltrate the soil and become ground water - thus eventually causing a lowering of the water table. Such a change in the hydrologic conditions can cause wells to go dry, or, in extreme cases in coastal areas, reverse the direction of groundwater flow, permitting salt water contamination of the aquifer.

Unfortunately, the state of Connecticut (similar to most other states) does not yet have detailed information such as the location, extent and capacity of many of its ground water resources. Such information is presently being gathered by the Water Resources Division of the U.S. Geological Survey in cooperation with DEP.

The Plan of Conservation and Development suggests that development on the surface of land over known aquifers be limited until the needed information is complete.

For further information...

-Water Resources Inventory of Connecticut Basin Reports covering the different areas in Connecticut. May be seen at DEP's Natural Resources Center, Room 561, or the Water Resources Division of the U.S. Geological Survey, Room 235, Post Office Building, Hartford.

federal air and water laws

There are of course many federal laws which impact significantly on land use patterns and decisions. The flood insurance program and coastal zone management act are discussed elsewhere, but two other major laws have a more subtle yet equally strong impact on land use.

The two are the Federal Water Pollution Control Act Amendments of 1972 and the Federal Clean Air Act Amendments of 1970. Both have been discussed at length in previous Citizens' Bulletins (in particular the April '74 Citizens' Bulletin), but a brief recap will serve to emphasize their importance in the land use planning aspect.

Much of the following discussion of the federal level is edited from a Conservation Foundation paper by Wendell Fletcher and Lloyd Leonard.

air quality

The land-use implications of the Federal Clean Air Act of 1970, though virtually unnoticed when the Act was passed, are becoming increasingly important.

The land-use effects of the federal air-quality law have a sharply defined focus: meeting and maintaining national ambient air standards, and probably, preventing significant deterioration of air quality in regions with air superior to the minimum national standards. The constraints set by these requirements are likely to define both the intensity and the kind of development that may take place in many areas within a state.

The law requires the states to establish a statewide preconstruction review procedure to assess the impact of significant new sources of air pollution. If a new source would result in a violation of a national ambient air-quality standard, or conflict with the state's air pollution control strategy, the state may not issue a permit to construct. EPA regulations permit the state to delegate part of this authority to local agencies.



INDIRECT SOURCES

As a result of a 1973 court order, states will also be expected to review the impact of major new facilities which, though perhaps pollution-free themselves, may indirectly cause a violation of air-quality standards by attracting large numbers of automobiles. Examples of such indirect sources include roads, airports, shopping centers, recreational complexes, and other commercial and residential developments.

Connecticut's indirect source regulations went into effect October 1, 1974.

The state's indirect source regulations are aimed at carbon monoxide, a pollutant emitted from automobiles. The authority to set limits on the amount of pollution from new motor vehicles rests with EPA, but through indirect source regulations, the state regulates the impact of sources which attract the producers of the pollutants.

DEP's Air Compliance Unit evaluates proposed indirect sources to determine their potential impact on air quality. If the addition of a new indirect source to a highly polluted area will cause federally-set ambient air quality standards to be exceeded, DEP may not, under federal law, approve the building of that project, unless modification can be made that will decrease expected pollution from the source. As long as no federal air quality standards are exceeded, DEP can not refuse permission to build.

There are three ways in which a municipality can participate in the indirect source review program: by determining which development in the municipality is subject to the regulation and issuing a permit application to the developer proposing such a construction; by appointing an agency or official to review and comment on any application form and on the DEP evaluation; and by accepting air quality reports from DEP and including in its own decision-making the air quality effects of proposed development. DEP has urged municipalities appoint a local agency to oversee the program in the municipality.

The indirect source regulations add air quality to the other planning criteria that must be considered before construction of many kinds of new facilities can begin. Information supplied by DEP which provides municipalities with an evaluation of how much of the available air resources will be used up if the development is built will be invaluable to towns that must plan for wise use of their limited air resources.

TRANSPORTATION CONTROLS

In Connecticut, as in other states, photochemical oxidants (smog) are a more severe problem than was initially believed. This pollutant is formed when nitrogen oxides react with hydrocarbons in the presence of sunlight. High concentrations of photochemical oxidants are largely due to emissions from motor vehicles which produce the bulk of the nitrogen oxides and hydrocarbons in the state.

The courts have ruled that when federal ambient air quality standards are exceeded for photochemical oxidants, states must propose transportation control strategies designed to reduce automotive emissions to a level consistent with the standards which must be met in 1975. The court ruled that after a strategy is prepared, a state may request a two-year extension to 1977 for elements of the plan, but no extension can be granted unless the state has a transportation control strategy and begins to implement the parts which can be put into effect immediately.

Monitored data shows that parts of Connecticut will not meet the standard

for photochemical oxidants by 1975 unless further controls are integrated into its air quality implementation plan - and these will be transportation controls.

Transportation control strategies for two specific areas of the state are in the planning stage. The strategies generally fall into two categories: reduction of the amount of emissions coming from each vehicle through programs which might include inspection and maintenance of automobiles, and reduction of the amount of vehicle miles travelled, by such means as carpooling, and increased availability and use of public transit.

DEP, DOT, and the Planning Section of the Department of Finance and Control are working together to coordinate the control strategies and solicit maximum citizen input, an approach which should encourage diverse input and coordination with other plans such as on-going transportation plans by DOT and the Energy Agency's contingency planning.

The goals of the transportation control measures are to achieve clean, healthy air; conserve scarce energy resources; provide good transportation service for all citizens; and provide capacity for development.

Part of Connecticut's photochemical oxidant problem is regional in nature, since the highest levels are recorded on sunny summer days when winds are blowing from the southwest - the New York-New Jersey region.

The solutions must also be regional, since air pollutants do not respect state boundary lines. If Connecticut were to try to achieve federal standards by requiring extreme restrictions on the use of cars within its borders, the state might well fail to meet health standards, due to the New York-New Jersey problem.

Because of this, Commissioner Costle has taken steps to assure that Connecticut is not forced to bear a disproportionate share of the burden for lowering automobile air pollution. He has met with EPA Region I and II administrators who have federal regulatory responsibilities for the east coast from New Jersey to Maine, and with the Director of the Air Resources Agency of New York State. The EPA administrators have agreed that Connecticut should not and would not be forced to bear a disproportionate share of the burden for cleaning air polluted by others as well as itself.

AIR QUALITY MAINTENANCE PLAN (AQMP)

Because case-by-case reviews may not be sufficient to determine long-term impacts of individual sources on air quality under the indirect source program, EPA is requiring states to prepare plans for areas which, due to current pollution levels or projected growth rate, have the potential of exceeding the air-quality standards within a 10-year period (termed Air Quality Maintenance Areas).

These plans will constitute a revision of the existing State Air Quality Implementation Plan. The plans are to provide a regional approach for evaluating the impact of growth and development on air quality. They are to be prepared by mid-1975 and are to describe the measures necessary to meet and maintain the applicable air-quality standards. Though these plans are not required to be land-use plans, it is possible that portions of them will include provisions which will directly affect the way land is used.

Before choosing the control strategies that will constitute the AQMP, accurate modeling projections of air quality through 1975 must be made, and the gathering of data to input into the model is the current AQMP task at DEP.

The data includes point sources, area sources, control factors (effect of current regulations), industrial growth factors, population factors, and location of future growth and new emissions.

Planning will begin after the modeling, and will be open to citizen input.

NONDEGRADATION

As a result of a federal court order, upheld by the Supreme Court in 1973, state air quality programs must also prevent significant deterioration of air quality in those parts of a state where existing air quality is superior to the minimum national standards. EPA issued regulations in December, 1974, to implement the program, but it is likely that there will be litigation in the courts brought by environmental groups that feel the regulations do not provide sufficient protection for this superior air quality.

According to EPA regulations, there are three air quality class categories. Class I represents areas in which little change in air quality will be allowed. Class II represents areas where well-planned growth can occur to a moderate degree. Class III represents areas where the air can be polluted up to the national standards. Initially, all clean areas of the country will be considered

to be Class II. Each state can then redesignate certain areas after extensive public hearings.

Regulation of air quality in Class I and Class II areas, according to EPA, will only deal with sulfur oxides and particulates. In each of those two classes, only a certain increment of additional pollution will be allowed over 1974 levels. This will be achieved by reviewing sources subject to EPA's New Source Performance Standards (there are now 12 types of sources in that category) to determine whether the operation of the source will cause those increments to be exceeded.

The EPA program is scheduled to begin on June 1, 1975, unless litigation causes delays.

water quality

The federal P.L. 92-500 and the state's clean water legislation have both mandated a number of programs to control discharges into the state's waters -- basin planning, facilities planning, and the water policies of the Plan of Conservation and Development are examples of programs which consider both land use and water quality.

In the Federal Water Pollution Control Act Amendments of 1972, it is realized that point source control alone would not be adequate to achieve the 1983 water quality goal of fishable and swimmable waters. So-called non-point sources had to be controlled as well; non-point sources include such things as urban storm water runoff, acid mine drainage, combined sewer overflows, agricultural runoff, pollution from construction activity, sludge disposal, erosion and sedimentation, and residual wastes. Section 208 of the Amendments is the principal mechanism for controlling such sources.

Section 208 is both a planning and regulatory mechanism for developing control strategies and implementing controls on non-point sources of pollution. It also provides for the coordination of controls on large complexes of point sources where the uncoordinated siting of such facilities would fail to protect water quality.

Finally, it brings in to explicit consideration "non-structural" pollution control options which can make technology and money go further toward achieving the 1983 goal.

Section 208 seeks to develop this planning and management capability on an areawide scale. Areawide pollution control efforts are necessary to coordinate growth - sewerred and unsewerred. The areawide scope can encompass large segments of river basins or entire basins; it can help solve multiple river or lake pollution problems.

Areas designated for Section 208 planning have two years from the date funds are provided to complete a plan for controlling the types of pollution mentioned above. 208 plans will identify and develop control procedures for such problems as agricultural, construction-caused and residual waste pollution. After review by the Governor and EPA, the plan is adopted and the land use management phase can then be implemented, building on present management structures.

Implementation of 208 begins when the Governor of a state, in approving the Section 208 areawide plans in 1977, will designate management agencies to implement the various provisions of the plan. Plan implementation will be achieved in a variety of ways. First, regional jurisdictions will have pledged themselves in the process of the Section 208 designation to, as far as practicable, implement parts of the plan. Existing state and local agencies will also be management agencies.

For FY '75, the law provides \$150 million for funding Section 208 planning. Once an area is designated and prepares a grant application, federal funds for one hundred per cent of costs of the two year planning effort are provided.

IMPLEMENTATION IN CONNECTICUT

In Connecticut, IEP's Water Compliance Unit is responsible for implementation of the Federal Water Pollution Control Act

Amendments of 1972.

Section 208 requires the Governor of each state to designate areas in the state which will be subject to areawide planning.

In Connecticut, the Governor has for the present time chosen to non-designate



Existing and Programmed Sewer Service Areas
From the Plan of C and D

the state, meaning the state agency, DEP, will conduct 208 planning.

The consensus of the RPA directors and IEP's Water Compliance Unit is to pursue means for permanently designating the entire state as one 208 area.

A committee made up of three Regional Planning Agency directors, State Planning and Budgeting personnel, and IEP Water Compliance personnel has convened to develop administrative elements and detailed study objectives for the 208 program. The subcommittee has proposed a 208 planning board made up of local, regional and state representatives. The concept of the 208 planning board met approval by the RPA directors and the preliminary application will be submitted to EPA in late December.

All of the planning which is done under the Federal Water Pollution Control Act Amendments of 1972 must take into consideration any and all areawide plans set up under section 208. This ensures local control in policies and decisions which are certain to influence land use and development.

SEWERAGE FACILITIES

a) Central Systems

The Federal Water Pollution Control Amendments of 1972 deal with wastewater treatment facilities specifically in Section 201.

Section 201 of the federal act, which deals with facility planning, is geared towards specific wastewater treatment facilities for individual municipalities or groups of municipalities. Facility plans will supplement traditional municipal engineering reports for proposed wastewater treatment systems, by requiring a detailed environmental assessment with technical and economic evaluations of the alternatives available. The process begins with the issuance of an order to the municipality that needs corrective action. The municipality then hires a consultant to do a study. The study, which is eligible for funding as part of the total federal/state construction grants program, will identify geographic areas which have a problem, the nature and magnitude of the problem and the configuration and timing of facilities needed to deal with the problem. The state reviews the facility plans for consistency with the Plan of Conservation

and Development.

Connecticut P.A. 73-555, which among other things brought the state law into conformance with the federal law, also prohibits any person or municipality from discharging sewage into any water of the state which is a tributary to an existing or potential water supply reservoir. This has the effect of prohibiting - or at least stringently circumscribing - development along certain water supply areas.

b) On-site Systems

Septic systems may be preferable to sewers in many areas - but here too, land use considerations play a major role in siting such

septic systems, and the development which requires them.

Sewage discharges can determine land use patterns across the state, as well as in the vicinity of water supply areas. Houses or businesses should not be built in areas where the natural resource limitations preclude a septic system, unless that area can be properly sewered. In many instances in Connecticut, areas which have been sewered were formerly served by septic systems -- systems which failed, and could not be made to function adequately. Some failures are due to normal aging; many are premature and can be traced to improper design and installation. Failed systems cause pollution of ground and/or surface waters; they can also force a community's hand in land use decisions. Sewering may tend to precipitate an intensive development pattern in areas where natural resources limitations render the land otherwise unsuitable for normal construction purposes.

Intensive development in such areas often endangers groundwater supplies, and therefore drinking water, wetlands and other natural resources - which may foreclose development options in other parts of a municipality. Such contamination may result from point or non-point sources.

Because of these facts, the Departments of Health and Environmental Protection have jointly revised the septic code - to more specifically define engineering limitations and requirements in areas marginally suited to septic systems.

DOH has historically had jurisdiction over septic systems through the public health code. IEP has responsibility for subsurface pollution discharges which of course, include septic systems. In most cases, the new draft subsurface regulations



propose to leave the issuing of permits up to the local authorities, who are usually the local health officers, but delegate to them the powers of IEP, thus strengthening their hand.

The proposed regulations set up a revised procedure for processing permits required for installation of septic systems. Proposed permits are separated into four categories according to the natural resource base of the land into which the system will discharge, as well as the volume and composition of the sewage to be handled.

The proposed new permit system has an additional benefit -- more detailed consideration of the natural resource base will yield a wealth of additional information on that resource base. After integrating the information gathered from the permit applications with the already available natural resource data, Connecticut will have a much more complete picture of its soil, bedrock, water table and other resources and will be able to ensure that fewer septic tanks will fail in the future.

NON-POINT SOURCES

The Connecticut Department of Environmental Protection is now developing a multi-agency and multi-program non-point source (NPS) strategy. The initial identification of significant NPS areas will be made in the 303(e) basin plans, under which the nature of the pollution, due to land use or other factors, would be identified and load estimates made where data is available. The 208 planning process will then study the NPS areas identified under 303(e) and develop load estimates and necessary control strategies.

While this planning effort is being made, separate steps are being undertaken by the state to reduce special NPS problems such as erosion and sedimentation. IEP is now studying the sources of sedimentation and erosion and will be taking steps to

reduce these loads in light of the legal, technical, administrative and financial considerations. (See article in October issue).

Responsibility for NPS pollution lies with several agencies.

- a) the state IEP - identification and general strategy
- b) 208 planning agency (if established)- specific identification and control strategies
- c) municipalities - various public works activities and review of subdivisions
- d) state Department of Agriculture - a possible future conservation plan for each farm to reduce sediment and organic loads to streams.

Regulations for non-point sources have not yet developed by IEP, but the department has used its authority to issue orders of abatement for siltation problems. However, more emphasis in the future program will be placed on preventative measures for erosion control in cooperation with Soil and Water Conservation Districts.

For further information...

Areawide Waste Treatment Management Planning, EPA, Washington, D. C. 20402.

Clean Water for Connecticut, IEP Citizens' Bulletin, April 1974, pp 1-6.

The Federal Framework for State Land Use Programs, Conservation Foundation paper cited in previous article.

Citizens' Bulletin, September 1974, pp 1-4 for discussion of Connecticut septic regulations originally proposed by DEP and IDH. These have been substantially revised in the light of comment at public hearing; the revised regulations are available from IEP Room 129.

solid waste

dump is a dirty word

Also important in any consideration of Connecticut's land use practices is its innovative state solid waste plan.

Much land in Connecticut is and has been used merely as a disposal area, where discarded solid waste of society piles higher and higher, and the land thus used

becomes unfit for any productive use for years.

In 1971 P.A. 845 was passed, giving the state and through the state, DEP, the authority to develop a statewide plan to manage solid waste in every region. The plan was due July 1, 1973.

Concurrent with the development of the plan, the state moved to establish an independent implementing agency, for regardless of the final details, such an agency would be needed to carry out the solid waste plan. In 1973, P.A. 459 established a Connecticut Resources Recovery Authority (CRRA) to implement the plan.

The CRRA is a quasi public body governed by a nine-man board of directors, empowered to contract with private industry to design, construct and operate a solid waste system and market resources recovered by the system.

The plan that the CRRA will implement will ultimately consist of 10 major resource recovery facilities in various areas of the state, to which all of Connecticut's solid wastes will be transported - except in those municipalities which choose not to join the system. This is an option, as long as the system the municipality chooses meets environmental standards set by DEP, and conforms with the policy of the state to maximize resource recovery.

At the facilities, waste will be separated into recyclable material such as glass, metals, and burnable materials which include almost everything else. All recovered materials will be sold; others will initially be burned to generate steam and electric power. Eventually a pyrolysis process which produces a marketable gas or fuel oil may be used.

The volume of solid waste which must ultimately be disposed of on land is thus greatly reduced. It is estimated that at present 200 acres of land per year filled to a depth of approximately 10 feet

are needed for disposing of solid waste. Only 50 such acres a year will be required in 1985, with the plan completely implemented. And by 1985 the amount of waste will have increased 50 percent.

The solid waste plan will have more subtle effects on land use as well, for a good statewide transportation network will be required to get the solid waste from the consumer to the transfer stations, and then to the major resource recovery

facilities. Since transportation systems have great effect on land use patterns, the solid waste system could be used to double land use benefit.



Disposal areas, of course, eventually fill up, and hopefully, can then be used for more productive purposes.

DEP recommends that exhausted disposal areas be used for open space or recreation activities. Any structures which might be proposed for such landfilled areas require special design and materials to overcome associated problems such as settling of land, methane gas production and leachate.

For further information....

-For a detailed discussion of the solid waste plan and the CRRA, see the September '74 Citizens' Bulletin.

-Connecticut Resources Recovery Authority, 60 Washington Street, Hartford, Ct. 06115.

connecticut river gateway

innovation in land use

The Connecticut River Gateway Zone, authorized by P.A. 73-349 as amended by P.A. 74-103, "An Act Concerning the Preservation of the Lower Connecticut River Area", is a milestone in Connecticut's land use history. Eight towns--Lyme, Old Lyme, Essex, Old Saybrook, East Haddam, Haddam, Chester and Deep River--have voted to establish a continuous conservation zone along the Connecticut

River to preserve the natural river environment against incompatible development. The towns thus voted to collaborate in a unique approach to handling land use decisions.

Under the Gateway, each town is amending its zoning regulations to conform to the new standards recommended by the Gateway Committee last October and pre-

sented to the planning, zoning, and conservation commissions of each town for review and comment during a 90-day period. These new standards apply only in the Conservation Zone, which covers from 10 percent to 20 percent of each town, though some are considering applying them throughout the town. The new standards will require relatively minor changes in existing zoning controls over land coverage, signs, building height, burning of undergrowth, earth removal, and dumping of refuse. New regulations will be needed to cover the setback from the river edge, site plans, erosion and sedimentation, and timber cutting.

A new agency, the Connecticut River Gateway Commission, has been formed. It consists of eleven members, one elected by each of the eight towns, one appointed by each of two regional planning agencies serving the area, and one representing DEP.

The Commission will have the following powers and duties:

- to employ expert and other assistance, to accept funds from any source, and to report annually to the General Assembly on its activities and finances;
- to review, and approve or disapprove, the adoption, amendment, or repeal of zoning ordinances of the member towns affecting property in the Conservation Zone, on the basis of compliance with the zoning standards set forth in the act;
- to revise the zoning standards adopted for the Conservation Zone, after review by the planning, zoning, and conservation commissions of the towns, and a public hearing;
- to appear, with the status of an aggrieved party, in hearings before the zoning

board of appeals of each member town affecting land within the Conservation Zone;

- to approve or disapprove the acquisition by the state of scenic easements and development rights in the Conservation Zone.

The state will proceed, as authorized by the act, to acquire less-than-fee interests, in the form of scenic easements or development rights, in 2500 acres of the Conservation Zone, for which \$5 million was authorized by the legislature. The Gateway Committee, as required by the act, has recommended the areas for such acquisition, giving priority to the preservation of the undeveloped bluffs, heights of land, and unique shoreline features other than wetlands and islands, since the latter already receive protection through state ownership of 2700 acres in the Zone and from legislation regulating the use of wetlands.

Many of the programs described in these two Bulletins deal with critical areas such as wetlands, or problems such as solid waste. The Gateway deals with an entire area, crossing political boundaries and setting standards for area and use regulations. This fact, plus the local, regional and state cooperation required to establish and maintain the Conservation Zone, make the Gateway a unique program. Its implementation will be valuable to watch as a pilot study in both land use techniques and regional implementation.

For further information...

- Mr. Stanley Greimann, Director, Connecticut River Estuary Regional Planning Agency, Hitchcock Corner, Westbrook Road, Essex, Ct. 06426; 767-0944.

aesthetics

intangible but essential

Among all the economic, resource quality, growth and population elements which affect land use patterns, let us not forget the intangible, very important, concept inadequately called aesthetics.

Good land use produces a pleasing environment - and a pleasing environment is necessary to man to relax his tensions, allow him freedom and release his mind so he may aspire to more productive acts than avoiding a traffic jam, blocking out a garish billboard lined street, or recognizing his house among a hundred similar

ones in a uniform subdivision. Aesthetics are intangible, but good aesthetics are one undeniable need for that elusive quality of life which is a necessity for human happiness.

There are some programs which relate to small parts of the aesthetic concept, though in the end it is the entire environment which makes up the aesthetic impact of a person's surroundings.

These programs include billboard removal and sign ordinances, which in

Connecticut are entirely under local jurisdiction (DEP has a booklet describing model sign ordinances which communities should find useful), and litter, which is a solid waste and natural resource problem, but an aesthetic one as well. The litter problem is, however, addressed in a state law, P.A. 74-262, which mandates DEP to establish a youth litter corps to collect not only litter, but data on its composition and quantity. DEP must report to the Governor and General Assembly by February 1, 1975, on the department's recommendations for controlling litter, utilizing uniform litter receptacles and bags, and investigating the returnable beverage container legislation in Oregon and Vermont in terms of litter reduction and feasibility for Connecticut. The act also lowers the penalty for littering from \$200 per offense to \$10 for a first offense and no more than \$100 thereafter, in order to encourage enforcement of the law.

Development on ridgetops may also be considered a question of aesthetics. Ridgetops - or more simply hilly or mountainous regions- are valued highly for their scenic beauty. A house or business sited on a hilltop often commands a lovely view.

Conversely, it can also be seen for miles. While it is not easy to construct on a ridgetop due to usually shallow soil composition overlying solid rock, special engineering can indeed make such construction feasible - with consequent adverse effect on scenic quality.

To date in Connecticut, only the Connecticut River Gateway zone described elsewhere in this issue has formally advocated regulation of development on ridgetops. Other states have gone further; Vermont in 1970 passed its innovative state law 250, a section of which created a state body to regulate development on elevated areas 5,200 feet and above.

TREES

Trees may also be considered an important aesthetic component, as well as a natural resource. Shade trees on public lands are protected by law (Sec. 23-58 to -60 of the Gen. Statutes) from destruction and defacement.

The General Statutes require that within 30 days of their election, selectmen or comparable officials from towns and cities must appoint a town tree warden. The tree warden has responsibility for the care and control of all trees and shrubs within the limits of any public road or grounds within the town. The exceptions to this are grounds along state highways which are under the control of the commissioner of transportation, and grounds in public parks which are under the jurisdiction of park commissioners. The care and control extends to limbs, roots or parts of trees and shrubs that overhang the limits of any public road or ground.

The tree warden also has the authority to enforce all provisions of law for the preservation of trees and shrubs and of roadside beauty. It is his job to prescribe regulations for the care and preservation of trees and shrubs. If the warden thinks the public safety demands the removal or pruning of a tree or shrub under his control, he has the authority to have it removed or pruned. If any person, firm or corporation objects to the act, he or it may appeal to the tree warden in writing and a public hearing will be held. The warden will make a decision granting or denying the application and the aggrieved party may appeal.

With the approval of the town officials, the tree warden may also remove any trees or other plants within the limits of public highways or grounds under his jurisdiction which are particularly obnoxious as hosts of insects or fungus pests.

The tree warden is responsible for the planting, spraying, care and preservation of trees, shrubs and ornamental shade trees within his jurisdiction. Those which are planted will be considered public shrubs and trees, and may be removed only upon a written permit from him. He has the authority to remove illegally erected signs or advertisements placed on poles, trees, or other objects within his jurisdiction.

While such programs as litter, billboard and ridgetop control constitute fragments of the aesthetic question, it is the total effect of all parts of his environment on man which constitute "the aesthetics" of an area. Land use in toto is, therefore, the crucial aesthetic



development siting

know the land you use

If there is one crucial rule in any land use decision on any level, it is **KNOW THE LAND YOU USE.** Land is not a uniform commodity. It may be wet part, all, or none of the year, it may be sandy or rocky, steep or gently sloped, harbor a geologic fault, an aquifer, or solid rock at the surface. Use of the land must follow the natural limitations of the land, or discomfort or even disaster will inevitably follow. Houses built on clay are liable to have their foundation crack. Houses built in a flood plain will be flooded and may even be destroyed. Septic systems sited in a wetland will malfunction - and pollute the wetland.

The land will set its own limits to use - and those limits will be expressed by pollution. If instead we set the limits on the basis of knowledge of the carrying capacity of the land, a quality environment will be a much more likely result.

Identification of the natural resource base of the land is crucial. Connecticut is among the leaders in its recognition of this fact, and three programs exist to help in this natural resource identification. One tool - the environmental impact statement, was discussed in the last issue. Two others follow.

THE SOIL SURVEY

Soil surveys are performed by the Soil Conservation Service (SCS), part of the U.S. Department of Agriculture. (The beginnings of SCS nationwide are described in the previous issue's article on erosion and sedimentation.)

A soil survey locates, describes and shows the extent of the various kinds of soils. It indicates soil properties and conditions such as natural soil drainage, permeability, infiltration rate, flood hazard, depth to bedrock, stoniness, erodibility, acidity, alkalinity, load bearing capacity, slope, content of sand, silt and clay, shrink-swell potential, corrosivity, and soil structure.

Soil surveys can help planners make and substantiate the decisions that local government officials translate into zoning ordinances, building permits, author-

izations for sewer extension, and other regulations that mold a growing community. Information about soil limitations for given uses helps prevent major mistakes in land use and unnecessary costs to individuals and the community.

Soil surveys help in determining the extent of floodprone areas, and they rate the hazards that affect use of soils in such areas. In many states soil surveys are used to guide municipal and other government agencies in restricting the use of floodplains for housing, septic tank absorption fields, and other forms of intensive development.

SCS has developed soil interpretations for use in making land use decisions. These interpretations range from community and urban development through recreation and farming. A land capability system is used for grouping all soils for farming according to management limitations and needs. Land capability classes run from I - VIII. Class I has very few limitations and is well suited for farming. The degree of use limitation increases on the scale up to Class VIII.

In Connecticut, the soil survey is the official basis for the identification and location of inland wetlands and is being used to help identify prime agricultural land. Soil tests are used in siting streambelt systems (see preceding issue, pp. 28-29) - and should be used before any land use is contemplated.

The entire state has been mapped in a general soil survey, and 80 per cent of the state has been subject to a detailed soils survey, which gives the more specific information and soil boundary lines necessary for wise development decisions. About 630,000 acres of the state remain to be mapped in detail; it is anticipated this project will be finished in 1979. Litchfield, Tolland, and Hartford counties are completely mapped; Windham is 75 per cent complete, New Haven County 90 per cent, Middlesex County 55 per cent, New London County 65 per cent, and Fairfield 40 per cent.

THE ENVIRONMENTAL REVIEW TEAM

Environmental impact assessments may be highly desirable, even critical, for development proposals on federal, state and local levels. Impact statements are mandated by law on the federal level, and as of February 1, 1975, on the state level--but what of projects on the local level? Expertise is simply not always available in every town to evaluate soil, biological, geological, hydrological and other systems. Where can a town turn?

In Eastern and Northwestern Connecticut, a town can turn to the Environmental Review Team of the Resource Conservation and Development Projects. The review team concept has been explained in detail previously, in the May Bulletin. Suffice it to say here that the Review Team concept consists of experts from a variety of disciplines, who are available as a team to review a site proposed for development. The final report, a blending of their observations, gives an excellent summary of the natural resource conditions of the site, the areas of potential conflict between the proposal and the site conditions, and may include recommendations to reduce undesirable consequences.

The review team operates at town request and does not involve regulatory programs or actions. The review team in Eastern Connecticut has been functioning for over two years; the review team in the King's Mark RC & D area is just being formed.

Sixty-five towns in central and southwestern Connecticut are not covered by a RC & D project - and thus do not have access to an environmental review team. Residents in these towns may wish to investigate applying to form an RC & D area (contact Elizabeth Jester: 566-2110). DEP, to fill the need in the meantime, hopes to form a review team of its own, available to the towns. The team would operate under the Department's Natural Resources Center.

THE NATURAL RESOURCES CENTER

DEP is very concerned that the host conditions of the land are respected in any development siting in the state, for land degradation and pollution are the inevitable results of ignoring the limitations of the land. In essence, this philosophy is the foundation of the Department. In practice, it is expressed in every land purchase, air, water or solid waste decision, habitat management program or recreational decision a DEP employee makes.

One unit within DEP has responsibility for identifying the natural resource base

of the state, and providing that data to other DEP units and to local decision-makers, who may all too often have unavailable the expertise to interpret the natural resource information for best use.

The Natural Resources Center is responsible for basic data collection and map production, including inventory of topography, geology, hydrology, soils and biology, with the goal of registering all information on a common base for ease of information, integration and use.

The Center also maintains an index set of aerial photographs of the state and sends an annual natural resources summary to municipal officials, describing the natural resource data available for each town. The section also, in cooperation with the Cooperative Extension Service, conducts workshops for municipal officials on the use of natural resource data in land use decisions.

The center cooperates closely with SCS, The U.S. Geological Survey (USGS) and the other organizations which have been doing an invaluable job of identifying our natural resource base. Because of the efforts of all of these organizations, Connecticut is far ahead of most states in identifying its resource base.

For further information...

- Soil Conservation Service, Mansfield Professional Park, Storrs, Ct., or the eight regional field SCS offices, one in each county.
- The Town that thought it Could, 14-minute slide talk made under the direction of Charles McKinney, new DEP Coastal Zone Management director, shows how a rural community in New Hampshire set about creating a town plan on the basis of soil surveys and natural resource overlay maps. Contact DEP's Planning and Research Unit, 566-4202.
- A Connecticut Soils Primer, Cooperative Extension Service, available at Extension Service Offices in each county.
- Use of Natural Resources Data in Land and Water Planning, Bulletin of the Connecticut Agricultural Experiment Station by Hugo Thomas and David Hill. Address below.
- Know the Soil You Build On, Agriculture Information Bulletin 320, Soil Conservation Service, at address cited above.
- Soil Surveys can Help You, brief pamphlet from SCS.

- The Environmental Review Team, DEP Citizens Bulletin, May, 1974, pp. 6-7.
- The Environmental Review Team Evaluation of Land Use Proposals, Cooperative Extension Service, College of Agriculture & Natural Resources, University of Connecticut, Storrs, Ct., 06268.
- Know your Land - Natural Soil Groups for Connecticut, Cooperative Extension Service as above.
- Land Use Planning in Glastonbury, the town requires environmental impact assessments for all local projects. DEP Citizens' Bulletin, May 1974, pp. 8-9. Copy of Glastonbury ordinance and guidelines from DEP, Room 110.

The siting of development with knowledge of the natural resource base of the land is essential - but so are the legal, and social tools and techniques to put this knowledge to work. Here the editors really must restrain themselves, for such tools, which include cluster zoning, planned unit developments, urban renewal and other grant programs, subdivision regulations, and transfer of development rights, are subjects for a complete issue in their own right. Suffice it to say in this issue that those tools exist in a variety of forms, and not only should be explored, but, for the most part, have not to date been used to maximum benefit in Connecticut.

The following is a list of such tools which are available in Connecticut - from a list compiled by the Planning and Budgeting Division, Connecticut Department of Finance and Control. The cites refer to the Connecticut General Statutes.

- Zoning; including Flood Plain Zoning (Chapter 124)
- Planned Unit Development (Chapter 124a)
- Municipal Planning Commission (Chapter 126)
- Subdivision Regulations (Chapter 126)
- Conservation Commissions (Chapter 97, Section 7-131a)

Conservation Commissions "shall conduct researches into the utilization and possible utilization of land areas of the municipality and may coordinate the activities of unofficial bodies organized for similar purposes....shall keep an index of all open areas, publicly or privately owned, including open marshlands, swamps and other wetlands, for the purpose of obtaining information on the proper use of such areas, and may from time to time recommend to the planning commission or, if none, to the chief executive officer or the legislative body plans and programs for the development and use of such areas."

- Regional planning (Chapter 127); commentary on referrals re zoning changes, subdivision approvals on land within 500 feet of municipal boundary line (Chapter 124, Section 8-3b).
- Tri-State Regional Planning Commission, participation at the state, regional and municipal level (Chapter 291).
- Urban renewal; grants to assist in land acquisition and improvement (Chapter 130, Part II)
- Grants-in-aid for acquisition and improvements of land for industrial and business development (Chapter 123).
- Grants-in-aid for harbor improvement (Chapter 133, Section 8-212).
- Grants-in-aid for housing site development (Chapter 133, Section 8-218).

For further information....

- Planning and Budgeting Division, Connecticut Department of Finance and Control, 340 Capitol Avenue, Hartford 06115
- January 16, 1975, 8 p.m., Granby Town Hall. Public meeting on cluster zoning, co-sponsored by the Granby Conservation Commission and the Farmington River Watershed Association. Slide presentation on cluster zoning, and experts discussing the concept; DEP representative on septic regulations and cluster development. For information call FRWA 678-1241.
- Management and Control of Growth, speech by Dallas Miner of the Urban Land Institute, at November 26 Land Use Conference in Connecticut. Good quick cite of land use regulation tools available to municipalities. From DEP, Room 110. Book of the same name forthcoming; see Publications list at end of issue.



taxation

money is the root of all...

From Facts and Issues, League of Women Voters.

"In 1969-1970, 42 percent of the revenue raised by the state and local governments in Connecticut came from the property tax, as compared to an average of 31 percent throughout the country. Only two or three states in the country depend more heavily on the property tax than Connecticut.

The result, of course, is that local governments must do everything in their power to increase their grand lists in order to obtain the money needed for the services they must provide. The pressures are great for encouraging clean industry, commercial development, and expensive residences. It is difficult to resist these pressures in order to preserve open space, forest, and farmland. At the present time a special assessment rate is available for agricultural land, open space, and forests, designed to encourage owners to keep the land undeveloped. It has not had a significant effect in stopping urban sprawl."

As Commissioner Costle has said, "Too many communities are forced to opt for the grand list rather than the grand design." This will take significant reform to change, but changed it must be if rational land use is to have a chance of surviving.

This issue is not the place to delve deeply into the convoluted issues of tax effects and reform, and the small size of this article is the complete reverse of the size and importance of the tax reform issue. Money may be the root of all evil - it is certainly the root of much land abuse.

For further information...

-Facts and Issues - Land Use in Connecticut; pamphlet of League of Women Voters of Connecticut, from which the first paragraph of this article was taken. 25¢ from LWV, 60 Connolly Parkway, Hamden, Ct. 06514.

taking v. police power

By Constance Luyster, law student and DEP summer intern.

Land use legislation in the 1970's reflects a growing consensus that the state's scarcest resource - land - is too valuable to be allocated by market forces alone. The effectiveness of protective legislation largely depends, however, on dispelling the misconception that regulation of land for the public welfare constitutes a taking which requires compensation to the owner.

Many people believe that the constitution permits every person to do whatever he wants with his land. Many others believe that land use may be regulated but never to the extent that a man or woman could not make a profit from his or her land. As a result people are often surprised to learn that the courts have adopted neither of these philosophies and that these attitudes were not necessarily held by the statesmen who framed and ratified the constitution.

While the exact motivation for the adoption of the taking clause of the 5th

amendment is not known, it is clear that regulation of land use for the public welfare was outside its prohibition. Such regulation was standard practice in England and the colonies where it provoked no serious controversy. During the first half of the 19th century up to the Civil War, both state and federal courts viewed the taking of land as an act different in kind from its regulation through the exercise of the police power. In 1857 Theodore Sedgwick, author of a treatise on constitutional law, summarized the status of the taking issue in this way. "It seems to be settled, to entitle the owner to protection under this clause the property must be actually taken in the physical sense of the word."

Justice Holmes decision in Pennsylvania Coal v. Mahon in 1922 broke down the neat distinction between exercise of the police power and an unconstitutional taking. The rule became "That while property may be regulated to a certain extent, if regulation goes too far it will be recognized as a taking." Since application of the rule depends on the fact pattern of each case,

however, past decisions are frequently difficult to reconcile.

More recent decisions reflect the changing mood of the country and its concern for the environment. While they often turn on a careful marshalling of scientific facts they reveal a strong willingness of the courts to uphold state and regional regulation as a valid exercise of the police power.

Common to many of the newer decisions are the assumptions that: (1) Regulation of land in order to protect the environment is no longer a purely local matter. New awareness of the fragility of the environment has required a development of the police power. (2) Regulation of land in order to protect the environment is a valid exercise of the police power to protect the health and welfare of the people. (3) As long as exercise of the police power is neither arbitrary nor confiscatory it does not give rise to a right of compensation even though the value of property may be reduced.

Consistent with the trend, the only decided Connecticut case concerning the question whether regulation by the Commissioner of the Department of Environmental Protection constitutes a reasonable exercise of the police power has been resolved affirmatively. In Brecciaroli v. Lufkin the Commissioner denied a permit to fill 5.3 acres of tidal wetland which were part of a larger parcel owned by Brecciaroli, most of which had been declared a wetland under the Tidal Wetlands Act (Section 22a-30 of the Connecticut General Statutes.) On appeal the court sustained the Commissioner's ruling reasoning that where a portion of the appellant's property can still be made economically useful by filling a lesser part of the wetland area, the Commissioner's action is neither arbitrary nor unconstitutional. 39

Brecciaroli has been appealed, but a survey of leading cases in other states suggests such decisions are being upheld nationwide. For example, in Candlestick Properties, Inc. v. San Francisco Bay Conservation and Development Commission, the court of appeals in California upheld a decision of the Commission denying a permit to fill land normally submerged at high tide. In doing so it affirmed what it saw as a new development of the police power: "In short, the police power as such is not confined within the narrow circumspection of precedents which do not cover and control present day conditions...that is to say as the commonwealth develops politically, economically and socially,

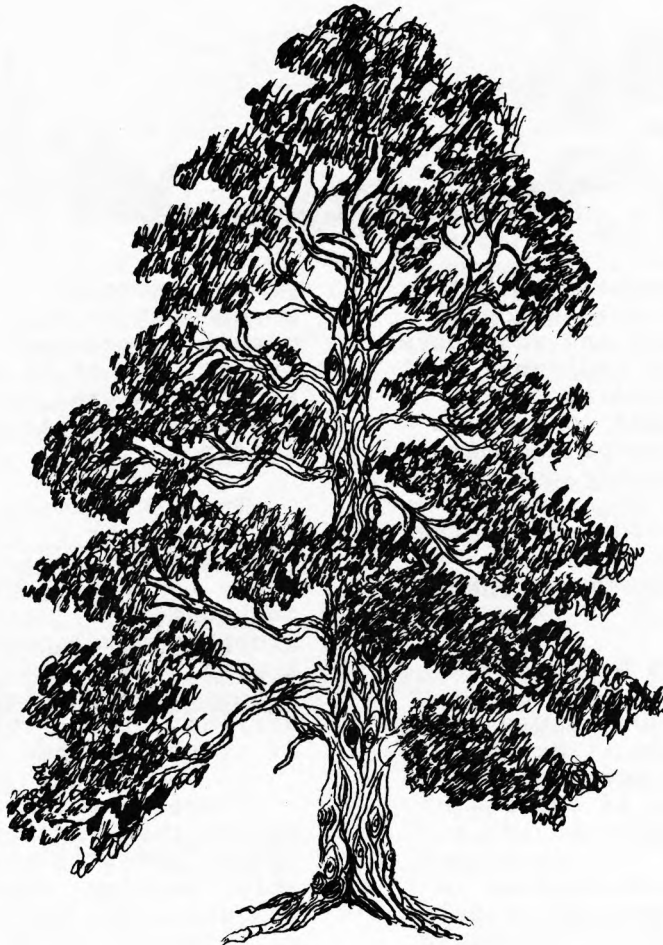
the police power likewise develops, within reason to meet the changed and changing condition." The court noted also the importance of a regional approach in protecting the public interest in the bay, both presently and in the future. It said that:

"The bay is the most valuable single natural resource of the entire region and changes in one part of the bay may also affect all other parts; that the present uncoordinated haphazard manner in which the bay is filled threatens the bay itself and is therefore inimical to the welfare of both present and future residents of the bay area, that a regional approach is necessary to protect the interest of the public in the bay."

A U.S. Supreme Court case, Town of Euclid v. Ambler Realty Co., also stated the changing

nature of the police power well.

"Regulations, the wisdom, necessity and validity of which as applied to existing conditions are so apparent that they are now uniformly sustained, a century ago probably would have been rejected as arbitrary and oppressive. Such regulations are sustained, under the complex conditions of our day, for reasons analogous to those which justify traffic regulations, which, before the advent



of automobiles..., would have been condemned as totally arbitrary and unreasonable. And in this there is no inconsistency, for while the meaning of constitutional guaranties never varies, the scope of their application must expand or contract to meet the new and different conditions which are constantly coming within the field of their operation. In a changing world, it is impossible that it should be otherwise."

Just v. Marinette County, decided by the Supreme Court of Wisconsin in 1972, is a leading case because it attempts to meet Holmes' arguments in Pennsylvania Coal v. Mahon

and because it articulates some of the assumptions which have lead to statewide environmental protection legislation. In 1966 Wisconsin passed a Shoreland Protection Act requiring that local governments adopt shoreland zoning regulations to protect lakes and waterways. Marinette County adopted an ordinance based on a state model providing for a conservancy district designed to protect shorelands designated as swamps and marshes. Mr. and Mrs. Just began filling the front sections of their property on Lake Norquebay contrary to the ordinance. The County obtained an injunction and the Justs appealed. The Supreme Court upheld the injunction.

The court distinguished between exercise of the police power and that of eminent domain. If the proposed use of land would cause public harm it may be regulated under the police power and no compensation need be paid. If the use of the land required by the state would produce a public benefit then it goes beyond the police power so that compensation is required. The court reasoned that regulation of the lakes and rivers of Wisconsin does not produce a public benefit for which compensation is required because the regulation seeks to prevent harm to the natural status quo of the environment.

"As people became more sophisticated an appreciation was acquired that swamps and wetlands serve a vital role in nature, and part of the balance of nature, and are essential to the purity of the water in our lakes and streams. Swamps and wetlands are a necessary part of the ecological creation and now, even to the uninitiated, possess their own beauty in nature."



The Wisconsin court also said; "It seems to us that filling a swamp not otherwise commercially usable is not in and of itself an existing use, which is permitted, but rather is the preparation for some future use which is not indigenous to a swamp. Too much stress is laid on the right of an owner to change commercially valueless land when that change does damage to the right of the public....The... ordinance preserves nature, the environment, and natural resources as they were

created and to which the people have a present right. The ordinance does not create or improve the public condition, but only preserves nature from the despoliation and harm resulting from the unrestricted activities of humans."
- Just v. Marinette County

In the final analysis, Just stands for the proposition that it is within the

proper exercise of its police power for a government to regulate land use by way of a permit procedure for the sake of the environment, for it is the environment's sake and the natural order of things which affect the public health, safety and welfare.

Two other noteworthy decisions are In the Matter of Spring Valley Development (The Supreme Judicial Court of Maine, 1973) where the court upheld the direction of the Environmental Improvement Commission stopping development of a subdivision along a pond; and Potomac Sand and Gravel Co. v Governor of Maryland (Court of Appeals of Maryland, 1972) where the constitutionality of state wetlands legislation was upheld.

These decisions go far to dispel the notion that regulation of land under the police power is an unconstitutional taking which requires compensation for the owner. The decisions are vigorous and show the willingness of the courts to defer to legislative intent and administrative decisions so long as those decisions are neither arbitrary nor confiscatory. They reflect a new awareness of the fragility of the environment and the need for regional and statewide regulation. Finally, they hold that regulation of land is a reasonable exercise of the police power to protect the health and welfare of the people

For further information...

- The Taking Issue, by Fred Bosselman, David Callies and John Banta, the book upon which much of this article was based. From Superintendent of Documents, USGPO Washington, D.C. 20404, for \$2.35.

for even further information....

Further references to each subject discussed are given at the end of each article. There are, however, others which those interested in land use in the state, or innovative programs in other states, would do well to consult.

Case Studies in Land Conservation - a series of case studies showing how successful land use programs were implemented. Now available, Partial Development Finances Open Space Preservation in Lincoln, Mass. Preservation of Chocorua Lake, New Hampshire by 54 Landowners, Bargain Purchase of Land by an Exempt Organization (Vermont); Conservation Easements Preserve An Island on the Maine Coast. \$10 each, bulk prices, for notification of further studies - New England Natural Resources Center, 506 Statler Building, Boston, Mass. 02116.

Connecticut in Focus 1974 "You can't tell the players without a program", and you must know who the decision makers are before you attempt to influence their decisions. This handbook by the League of Women Voters of Connecticut is an excellent guide to who does what in the state. \$5.12 including tax and postage, bulk price available. From LWV, 60 Connolly Parkway, Hamden, Conn. 06514.

Conservation Foundation, any of a number of issues of their excellent monthly newsletter concern land use, and many special publications relate to land use. Write for list. Conservation Foundation, 1717 Massachusetts Avenue, N.W. Washington, D. C. 20036.

Design with Nature by Ian McHarg.

The Environmental Outlook for Connecticut, Connecticut Audubon Bulletin, Nov.-Dec. 1974, by Wanda Rickerby. Summary of land use related legislation outlook for the next session of the state General Assembly.

Fifth Annual Report of the Council on Environmental Quality, has a long section on land use, and assessment of NEPA. \$5.20 from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 Stock No. 4000-00327

Land Use 75¢, League of Women Voters, 1730 M Street, N.W., Washington D.C. 20036

Land Use: Laws and Proposals, overview of state, federal and Connecticut land use programs, prepared by Janis Latham. Supply limited, while they last from Connecticut Office of Legislative Research, State Capitol, Hartford, Connecticut 06115

The Last Landscape, by William H. Whyte.

Management and Control of Growth - Issues - Techniques - Problems - Trends. In the final analysis, land use questions come down to growth questions, for if we did not grow, we would not need to plan for the new, but only maintain or reorganize the status quo. Every community faces growth questions in every education, taxation, housing, zoning or environmental decision they make. The major works discussing all sides of the growth questions are being assembled and edited into a three volume reference tool. The first volume deals with attitudes on and programs to limit growth, the second with the major court cases on the subject, the third with land use tools to direct or control growth. Available at \$23.75, or separately at \$10 apiece from the Urban Land Institute, 1200 18th Street, N.W., Washington, D. C. 20036.

A Model Land Development Code, American Law Institute, Philadelphia, Pa.

New England in the Year 2000, New England River Basins Regional Report, excellent forecast of economic development and resource demands, covering agriculture, minerals, natural areas, energy, tourism, recreation, transportation, etc. NERBC, 55 Court Street, Boston, Mass. 02108.

The Quiet Revolution in Land Use Control;

Council on Environmental Quality report on innovative state land use laws. Full report \$2.75, summary 45¢. From U.S. Government Printing Office, Stock #4111-0006, 710 North Capitol Street, N.W. Washington, D. C. 20402.

The Use of Land - A Citizens' Policy Guide To Urban Growth, a Task Force Report sponsored by the Rockefeller Brother fund. Published by Thomas Y. Crowell Company.

land use planning

-From the keynote address of EPA Administrator Russell Train at the November 26, 1974 Land Use Conference in Connecticut sponsored by the Natural Resources Council of Connecticut, DEP, and 30 other organizations across the state.

"...There is no question about whether or not we will have land use planning. The question is: what kind, and who will make the decisions. We already have land use planning of an ad hoc, accidental sort that, while it has made some people rich, has made most of us far poorer in terms of the kinds of choices we have and the quality of life we are offered...

"...In my view, there is hardly a social, economic or environmental issue before this country that is not somehow deeply and directly bound up with questions of land use -- with questions of how and where we organize our activities in space. And we cannot hope to really come to grips with these other issues -- of housing, of transportation, of air and water pollution, of equality of opportunity as well as quality of life -- until we begin to devise more effective and democratic ways of dealing with our patterns of growth and development...

"...whether we are trying to stimulate growth or stop it, we simply cannot expect to resolve the problems associated with growth on a case-by-case, community-by-community basis. The patterns of development that result from this approach must inevitably be both socially unfair and environmentally unsound. There is, to begin with, simply no such thing in any American metropolis as a self-contained, self supporting community in terms of the overall relationship among the elements of daily life -- housing, jobs, schools, transportation, stores and other services, recreation, open space medical facilities ...we cannot seek to save the metropolis

through the same fragmented approach that is largely responsible for its problems in the first place...

"...I want, at this point, to express my dismay over the fact that environmental and ecological values have at times been invoked as excuses for blocking the construction of low and moderate income housing. Communities who have never displayed much concern for sewage capacity or open space needs as long as the "right" kind of development for the "right" kind of people was involved -- have suddenly "got religion" when somebody proposed to build within their boundaries some low or moderate income housing. I can think of few greater tragedies than to allow "environment" and "ecology" to become code words for economic and racial exclusion -- for efforts that in intention or in effect, deny or diminish housing opportunities to Americans of modest means.

"...There is, in fact, no inherent conflict between the goals of full opportunity and environmental quality. The apparent conflicts that do arise under current conditions could be resolved far more readily under a...land use approach, that embraces the broad range of social, economic and ecological concerns within an entire area or region.

"...I was asked not long ago what kind of country I wanted to see America become by the year 2000.

"...I said that I wanted to see a healthy environment in which the human body and the human spirit could live and thrive. But I also wanted to see a diverse environment that would offer Americans far more and better choices....

"...If we can begin to come to grips with the problems of land use, then I think that we can, by the year 2000, build an America in which far more people have these choices open to them, and in which these choices are really worth making."



CONCLUSION

These two issues of the Citizens' Bulletin have attempted to present the programs presently dealing with land use in the state. The editors have regretfully resisted the provocative subjects of innovative ideas in other states, recommendations, and new programs and tools which might profitably be put to use in Connecticut. The purpose of the two issues was to describe briefly (and as it turned out, often unevenly) the status quo, which must be understood before it can be changed or better utilized.

Further issues, it is hoped, will deal with the range of exciting possibilities for land use in the state. Comments, suggestions, and particularly submissions for future articles are all welcome.

Gratitude to all those who painstakingly reviewed the articles, and contributed ideas and time. The list is too long to detail, but we very much appreciate the time and cooperation donated so freely.

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